Association of Indian Universities

ACHARYA N.G.RANGA AGRICULTURAL UNIVERSITY

ADMINISTRATIVE OFFICE : RAJENDRANAGAR : HYDERABAD-500030

Advertisement No.1/RC/98, Dated:10-11-1998

Applications in the prescribed form together with registration fee of Rs.100/- for others and Rs.50/- for SC & ST candidates are invited for the under-mentioned posts. Candidates should possess the prescribed qualifications as on the date of this notification. Number of posts for each of the categories is indicated in parenthesis. The categories OC, BC-A, BC-B, BC-C, and BC-D are indicated as O,A,B,C and D respectively. The 'W' in each category indicates the reservation for women. In respect of the Professor posts, if suitable women candidates are not available, such posts shall be filled by male candidates, subject to their availability

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Assistant Professor & equivalent: (1) Agricultural Economics -5(O-2, OW-2, ST-1), (2) Agricultural Engineering -4(O-1,OW-1, B-1, SC-1), (3) Agricultural Microbiology & Bioenergy -1 (D), (4) Agronomy -5 (O-1, OW-1, D-1, SC-1, ST-1), (5) Bio-Chemistry -3 (O-1, AW-1, SCW-1), (6) Entomology -5 (O-2, OW-1, BW-1, SC-1), (7) Genetics & Plant Breeding -8(O-3, OW-2, A-1, B-1, STW-1),(8) Horticulture -11 (O-3, OW-2, A-1, D-1, DW-1, SC-1, SCW-1, ST-1), (9) Plant Pathology -11 (O-5, OW-1, A-1, B-1, BW-1, SC-2), (10) Soil Science & Agril chemistry -5(O-1, OW-1, B-1, SCW-1, ST-1), (11) Statistics & Mathematics-4(O-1, OW-1, D1, SC1), (12) Ornithologist -1

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D.Faculty of Home Science: Professor & equivalent: (1) Food & Nutrition -1, (2) Extension Education -1(Temp)

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Assistant Professor & equivalent: (all temporary)-(1) Extension Education -2 (O-1, SC-1), (2) Family Resource Management -1(O), (3) Textiles & Clothing-1 (A)

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The University reserves the right not to fill all or any of the vacancies notified Prescribed application forms together with full details of qualifications prescribed for the posts and other particulars can be had from the University on payment of Rs 10/- in person or through a Crossed Demand Draft in favour of **Comptroller, Acharya N.G.Ranga Agricultural University, Hyderabad.** *No MONEY ORDER/POSTAL ORDER will be entertained* For obtaining it by post a self addressed and stamped envelope of Rs 12/- of the size of 35x15 cm should be enclosed to the requisition letter The cover containing the requisition for application form should be superscribed "Requisition for application" and sent to the Registrar, at the above address

Sale of applications from 16-11-1998. The last date for sale of applications by post is 5-12-98 and the filled in applications should reach the undersigned on or before 12-12-1998 by 4.00 PM

V. PRABHAKAR RAO
REGISTRAR

IN THIS ISSUE

Targeting Women for Development

Mridula Bhadauria*

Women's development is directly related with national development. India has one of the most forward looking constitutions and a large number of schemes and programmes have been initiated for women's development. There is no established development model to be copied but women's development in recent years emphasises on providing equal opportunities to women by removing gender bias; empowering women and creating self-reliance among them. It stresses adoption of a holistic approach to women's development encompassing health, education and employment. Programmes connected with women's development received impetus with the report of the Committee on the Status of Women in India, 1974, which focused on direct specific action for women to enable them to overcome their problems based on their involvement and participation in the process of development. In 1976 a National Plan of Action for Women was prepared by the Government of India, which along with the guidelines of U.Ns World Plan of Action for Women emphasised on employment, education and health for women. The National Perspective Plan on Women (1988) was drawn up for the mainstreaming of women's issues in policies and programmes and giving women at least one third share in the decision making bodies from Panchayats to Parliament.

The main drawbacks in women's development have been mainly ill health due to repeated pregnancies, child birth, malnutrition, over work and stresses, lack of education and lack of independent economic generation activities. Thus, the strategy for women's development should be three fold, i.e., health, education and employment which are the stepping stones for empowerment.

Health

Women's health status is basic to their advance in all fields of endeavour as in the absence of good health we cannot imagine good education and better employment for women. So the maintenance of health status of women is the first and foremost responsibility of the Government of India. Health is not merely the absence of disease, but a state o physical, mental and social well being.

The fundamental issues concerning women and their health are nutrition, sanitation, infection, over work, hazards, stresses, mental tensions, pregnancy, child birth and sexual harassment. Women face high risk of malnutrition, retardation in growth and development, disease disability and even death at three critical stages in their lives — in fancy, early childhood and reproductive phase. India is one of the few countries where there are fewer women than men — only 93 women for every 100 men. In 1901 the sex ratio was 972 women per thousand men. In 1991 it had declined to 927 per thousand men. The main reason of this declining sex-ratio is high mortality rate among females in ¡ age groups. The maternal mortality rate is a measure not only of pov erty but also of the priority society gives to a problem that is of life an death concern to women. In girls, malnutrition and undernutrition are

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limited access to health care are seen as the main causes of mortality. In India, 75% of all diseases are due to malnutrition, contaminated water and non-immunization. Women from infancy to adulthood are the worst victims of the assault of malnutrition as a result of social discrimination. A World Bank report on Women's Health Status in India, released in 1996, has grimly catalogued the variety of ways in which women are discriminated against. As girls, they get less vaccination, less education and less nutrition than their brothers and when they grow up, they are less healthy than their male counterparts and succumb more easily to sickness and disease. An Indian woman is 100 times more likely to die during or after child birth than a woman in West, according to the report.

Another important problem our society is facing is the incidence of child marriage which deprives girls of health, nutrition and education. At a time when they are not physically fit to take on the responsibilities of motherhood, they not only face higher risk in pregnancy but they also face compounded risk of ill-health all through the rest of their lives.

Women in rural areas, because of their household responsibilities and out of ignorance tend to neglect their illness until they become too sick to move around and perform household chores. A girl or woman is expected to work even if she is quite seriously ill while a boy with a headache will be told to lie down. The intra-household distribution of labour and resources is loaded against the girls, who work more and get a lesser share of food, health care, leisure and play. Although women suffer from greater incidence of poor health and illness, the traditional social system favours the health care of male members. Women patients are usually brought into hospital when the disease is at an advanced stage. Poverty makes the situation worst and women and children become the hardest hit of poverty. Today 80% of health care is in private hands which provide quality health care for those who have the purchasing power.

Targeting women to carry out the entire burden of conception, contraception and child caring has increased women's burden manifold. There is a need of sharing the burden by men also. The budget of the Family Planning Programmes is about Rs. 1500 crore whereas the budget of the health programmes is only Rs. 600 crore. It shows the wrong disposition of the total health programme for women as it considers them mere wombs and tubes. This approach will not make any significant change in women's

health status. In India socio-economic status, cultural setting and attitude of the family influence the access to health services by women. Research studies have shown a definite link between low socio-economic status and lack of knowledge and utilization of preventive health service. This is the reason that although we have family welfare, safe motherhood and child survival programmes, our maternal mortality rate continues to be embarassingly high. Most of the women (app. 40%) are suffering from iron deficiency both in rural and urban areas. The Gender Development Index (GDI), the maternal mortality rate, the inverse sex-ratio etc reflect the poor status of women and their health.

Suggestions

Education is the key to raise the health status of population. Research studies have shown that women's education positively influenced health of the family as a whole. An educated woman is more likely to share in family decisions about how many children to have, how to bring them up and how to care her own and her family's health. Kerala is such a well known example of low child birth rate, low fertility and greater women's life expectancy due to high percentage (87%) of women literates.

Women's health should be seen as a continuum. Healthy babies grow into healthy girls who become healthy women. Invariably women's health programmes are translated into maternal and child health, the idea being that a woman's health is important only when she is carrying out the all important task of producing a new generation. So, there is a need of changing the perspective of our society and our planners to look at the lives of women, from birth to old age, as a holistic process which requires care and nurturing althrough.

The real challenge before us is to tackle the careless attitude which most of the women have towards their health needs and nutrition. Too often, especially in rural areas, females eat last and the least. This neglect of health needs of women leads to serious problems and to a further undermining of their position and their capacities. So, there is a need that this practice must be discouraged by convincing them that the women's health is as important as that of the other family members.

Women need appropriate technologies to help them in food processing and preparation, and for water collection and treatment. These technologies with simple and comprehensive training will surely save the millions of women's hours of drudgery every day, improving health and releasing time and

energy for more productive purposes. By and large the technology already exists but there is too big a gap between those who create it and those who need it. So there is a need that the technology should be available to poor and illiterate women to aid expending their time, health and energy in fetching and carrying and pounding.

The public distribution system to ensure food availability and drinking water, transportation and other basic facilities are seen as necessary conditions for health along with a need based basic health care system. Since women are unlikely to seek health personnel in time, health personnel must seek them. Women need health care at the doorsteps. There is a need of making health system more sensitive to the needs of women and developing a mechanism to encourage women to seek early help. More attention to a women's health needs can prevent the serious problems which undermine her position and capacities. Women are the providers of health care yet they have little or no control over the shaping of health services, environment or research. The emphasis here should be on direct participation. Studies of some NGOs have revealed that community based health programmes implemented through community participation have had positive results.

Education

It is universally accepted that education is a significant instrument in improving the status of women. There is a close connection between education and development. No society can prosper without making women educated and empowered. The relevance of women's education and literacy to social, economic, cultural and political development of the individual, family, community and nation is universally acknowledged. A major change in the last decade has been the recognition of centrality of education in the struggle to achieve women's equality. Universal literacy has been targeted to be achieved by 2000 AD. The progress made by India in the field of education after independence, is unprecedented in the whole of Asia. For the first time in the history of India, a National System of Education is established — The National Policy of Education (1986). It laid emphasis on giving equal opportunities of education to those who have been denied equality so far, particularly, women. The idea of education for women's equality, participation and empowerment has been given top priority in Plan of Action (1992) and it impinges on almost all areas and aspects related to different levels of education.

Education can give a woman more awareness,

more choice and more confidence. It raises her value in her family and in her community. It is widely believed that women's education leads to reduction in family size, greater attention by mothers towards health, education and character building of their children, greater participation of women in labour market and greater per capita income and better quality of human capital. In the post independence period, literacy rates have shown a substantial increase. During the decade 1981 to 1991, female literacy has increased at a faster rate than male literacy. The percentage of girl's enrolment to total enrolment has also improved at all stages, as in 1992-93, it was 42.9% at primary level, 39.3% at upper primary level, 34.6% at higher secondary level and 32.8% at higher education level to the total enrolment.

But, still we have miles to go, as the report of the Ministry of Human Resource Development, 1995, demolishes the myth that women have come a long way. Goal of education for all by the yer 2000 is unachievable for women in India. More than 60% of women are still illiterate. What is more disturbing is that the rural urban gap in female literacy has increased. If one looks at the literacy figures, over 80% women in rural areas are illiterate and only 2% have gone beyond matriculation. The rural girls start schooling late and drop out early. The most distressing fact is that 90% illiterate rural females belong to scheduled castes and scheduled tribes. It is significant that the most populous states of India—UP, MP, Rajasthan, and Bihar — fall in the category of the most backward states, so far as female literacy is concerned. As regards female education, there is a remarkable consistency of policy recommendations since 1882. This is also true that there is an equal amount of consistency in the performance gaps. We have always chased targets, never met them. Education of girls in India is influenced by several factors and forces as social class, caste, ethnic group, residence in a rural or urban area etc. In poor families parents find little meaning in sending girls to schools when they are struggling for survival. Also, social and cultural traditions deriving from low status, early marriage, poor nutrition, poor health, household work and future job market discrimination on the one hand, and insufficient schools for the girls, distant located schools, inflexible timings, irrelevant and gender insensitive curricula, and lack of female teachers on the other, play an important role in non-enrolment and early drop out of girls from schools.

Suggestions

If education has to play an interventionist role in improving the status of women, there is an urgent

need of wide ranging reform of the curriculum, textbooks, training and orientation of teachers and administrators on the one hand, and awareness generation among parents and society on the other. The parents should be made aware of the various incentive schemes which reduce the direct cost of education such as free uniform and textbooks, hostel facilities, stipends, attendance allowance and stationery grant. The disparity between girls' and boys' participation in education, particularly in rural areas reflects the social attitude towards girl child. The first step to be taken towards girls' education either by government or NGOs should be social engineering. Awareness needs to be generated among the masses about the practical applicability of the girls' education in various fields of life. In this connection involvement of local leaders, voluntary agencies and different women's groups is also necessary. We generally see that most of the parents have a definite idea of linking their sons' education with employment whereas they have no such definite idea about their daughters' education. So the awareness needs to be generated in this field.

Non formal education is an alternative to the formal system which is viable, forward looking, flexible and cost-effective and has the potentiality of becoming major programme of education for girls who cannot attend school during normal school hours due to various reasons. The government should make it sure that the benefit of non formal education programmes like Adult Education, Total Literacy Campaign, Post Literacy Campaign, Education for All etc should really reach the rural illiterates especially women. It is rightly considered that population explosion is the main obstacle in spreading literacy. Population education should be a part of non-formal education programmes that are being taken to the village level. A linkage between informal and formal education must be developed so that the beneficiaries of correspondence courses/vocational training can enter the mainstream of education.

There is a need of promoting science education among girls. More girls schools are needed to offer science group subjects. Also, employment oriented vocational training counselling and guidance services should be organised as to reach the rural areas. For minimising dropout and wastage in case of girls education, the primary and elementary education should be linked with some financially beneficial activities. The literacy and enrolment are poorer among scheduled castes. One of the main problems at primary and upper primary levels, especially in the case of girls, is pupils' irregular attendance that

ultimately resulted in stagnation due to poor achievement. This should be taken care of.

It is also important to strengthen the already existing incentive schemes in the states, i.e., provision of free uniform, books, stationery mid-day meals, attendance, scholarships, and made available on time. Appointment of more lady teachers in primary and upper primary levels of education and organization of orientation and sensitization programmes for teachers are also necessary.

Employment

It is a fact that without economic liberation for women, no true development of women is possible. The emancipation of women can occur only when the women are given equal economic opportunities as a part of an overall development programme. The importance of utilizing women power to the economic advantage of the nation has become so evident that no profession or service is barred to women now-a-days. Presently, the women produce 50% of the world's food supply, account for 60% working force and contribute upto 30% of official labour force but receive only 10% of the world's resources and more surprisingly own less than 1% of world's real estate.

Participation of women in economic activities is a universal phenomenon. During 19th century, it was not a commonly accepted idea that women should go out to earn for the family, but because of increasing economic pressure and increase in the cost of living, such restrictions have gradually loosened. India has a total working population of 297 million. Of this, only 30 million belong to the organized sector. The remaining 267 million belong to the unorganised sector. Of the total employment of women, the organised sector forms only 4%, whereas, for males it is 10% of the total employment.

The unorganised sector provides employment to the majority of women workers in India. They account for 89% of India's and 94% of world's informal sector workers. As a result of low-visibility, non-recognition, low level of legitimacy, investment and resources, this informal sector is kept alive mostly due to the dynamism of poor women who carry on the sectoral responsibilities. The unorganised sector includes agriculture, forestry, livestock, fisheries, khadi and village industries, handloom, handicrafts, sericulture, construction, domestic work and food industry etc.

The condition of women workers in unorganised sector is not very satisfactory. Ignorance, lack of skill, seasonal nature of employment, lack of minimum

facilities at the work place, ill-treatment and bondage are some commonalities among unorganised women workers. Several researches on women workers have revealed that exploitation is rampant in this sector. They are forced to work for low wages and in poor conditions with no security of job for future. They lack a single employer with whom they can negotiate. They get money at piece-rate basis. They are mostly concentrated in home-based industries as casual workers.

In agriculture, the rural women play a vital role and participate in all stages of crop production, as they constitute 50% of rural labour force. They contribute in transplanting, manuring and fertilizing, harvesting threshing, winnowing, drying, and carrying the product. A research study about the working conditions of women in Himalayan region found that in Himalayas a pair of bullock works for 1,064 hours, a man for 1,202 hours and a woman for 3,485 hours in a year on a one hectare farm. In Rajasthan there are some villages with half a day long distance from drinking water.

A large part of female work is non-monetised as they spend time in collecting water, fodder and fuel, working and helping in their family farms and child caring etc which all are considered pure labour of love, leaving little time for women to personal development or personal care. Thus their work does not have the cash value as compared to their male counterparts. There are various economic, social and psychological reasons due to which women have entered in the employment market but at the same time they have to engage themselves in the unpaid labour of house work and child care. Whether they work for financial reasons or psychological ones, working women are torn apart by the dual pressure of work.

One thing is also noteworthy that while the employment opportunities for educated women have increased, there is a negative trend in the participation rate of illiterate and semi-illiterate women. This does not mean that education is a guarantee for employment, rather, it shows the nature of education system which has failed to penetrate in any significant manner the poor mass of illiterate women. In the absence of adequate opportunities, supportive institutions, proper education and vocational training, many women prefer to avoid competitive pressures and thus reinforce the current trend of discriminatory attitude towards them.

Suggestions

There is a need to relate education and vocational training in order to fulfil the actual needs of the employment. Our social biases regard suitability of women to certain jobs only which leads of over-concentration in a limited group of courses. So special awareness needs to be generated among women about the scope for employment that exists beyond the traditional small group of occupations of which they seem to be aware. There is also need of a national programme to introduce and strengthen science and mathematics teaching in all girls schools to improve girls access to technical, vocational and professional education.

The introduction of new macro-economic policies and modernisation of the process of production, demand the acquisition of new skills and training because in the absence of appropriate skills and proper training they may easily be displaced by new technologies or by skilled and trained persons. The government as well as NGOs should take steps towards skill development and vocational training for women. The greater coordination of education, vocational and technical training and some support services as working women's hostel, creches etc will surely improve the situation.

In order to solve the major problems of the unorganised female workers the need of hour is to organise them. This will enable them to wage a war against prevailing injustice. It is generally seen that women in this sector are completely aware of the incentives and benefits given by the central or state governments. They should be made aware of these schemes. Facility for loan, supply of required raw material, market support and preferential treatment should be given to women entrepreneurs. The employment potential of the people centred enterprises of unorganised sector should be recognised. But at the same time fraud organisations should be sternly dealt with. Any kind of exploitation of women at the work place must be checked through effective measures. Support services like childcare, medical care, working women's hostels etc must be provided to working women.

In a male dominated chauvinistic society, women have to work doubly harder to prove themselves. Women should not distance themselves from the ground realities of the real world. The world is changing rapidly and to manage their career successfully they require profound knowledge of the basics and understanding of the functioning of particular nature of their occupations — both internally and externally. There may be an arrangement for training programme of few weeks just after joining the job in order to provide the knowledge of the particular nature of their job. Inservice training programmes must

be organised whenever needed. Also, new areas should be explored for providing better self-employment opportunities to women keeping in line with the changing needs.

Conclusion

Thus, greater coordination of health, education and employment interventions will surely help in the development of women. The flow of benefits to women in these three core sectors must be monitored vigilantly. The centrality of education for women must be emphasised but we should not forget that education for all cannot be achieved without 'health for all' and 'work for all'. Our national objective of mainstreaming the women in developmental process requires the social acceptance of multiple role of women as home-makers, mothers and also the bread-winners. Marriage and motherhood which contribute in the continuation of the society should not be considered disabilities in the gainful participation of women in the economic process. The three aspects of gender empowerment — the health and education of women, eradication of gender barriers in employment, and full participation of women in democracy must be given most attention, which could help bring about the beginning of a transformation of many millions of women of India in the mainstream of national development.

References

1   Alagh, Y.K. 'Women and Development', *Mainstream*, July 29, 1989, p. 12.

2   Bhadauria, Mridula. *Women in India : Some Issues*, APH Publishing Corporation, New Delhi, 1997.

3.   *Country Report* of Fourth World Conference of Women, Beijing, 1995, Government of India.

4.   Grover, S.R. 'Status of Women's Education', *Political Economy Journal of India*, 1996, 4(1).

5.   *Fifth Survey of Educational Research*, (1988-92) Volume I, NCERT, New Delhi.

6.   Kynch, J. and Sen, A. 'Indian Women, Well being and Survival. *Cambridge Journal of Economics*, 1983, 7, 363-80.

7.   Mahajan P. Mani and Siby K. Josep 'Human Resource Utilization' : Musing on an, Alternative Development Paradigm. *Kurukshetra*, Dec 1996, p. 11.

8   Mittal, L.N 'Women and Educational Developmental Process. *University News*, 31(3), Sept. 1993, p. 3-4.

9   Nuna, S.C. *Women and Development* NEIPA, New Delhi, 1990.

10   Nayar, Usha. *Universal Primary Education of Rural Girls in India* Department of Womens Studies, NCERT, New Delhi, 1993.

11. *The Progress of Nations*, UNICEF, 1995.

12. *The Progress of Indian States*, 1995

Digital Multimedia : Impact on Society
Technological Developments and Applications

N. Kaur*
J. Singh**

Introduction

Multimedia is combination of several media to transport information in several forms from one point to another. Technology has enabled us to arrange that these points could be situated within one room, within a city or country or located anywhere on the globe. The transport media could be copper or fibre radio or optical waves. The forms of information could be text, audio or video (still or moving). And the terminal could be fixed or mobile, projection screen or T.V. tube, notebook computer or PC.

Technological Developments

The telephone, the computer and the television have today converged into a single-access digital technology and such networks in turn are leading to a high speed reliable and robust data communication network systems. This convergence is enabling interactive, self-directed participation to obtain services, products and information. By virtue of this convergence, we can have interactive TV, video on demand running on our computer screens, mail boxes which convert voice to digital or text form and back again, desktop video conferencing and a variety of electronic devices such as newspapers, shopping malls and financial reports brought to us via public networks. Moreover, technology has migrated from analog (continuously variable signals) to digital (binary signals) steadily over the last two decades. This trend has taken place not only in telecommunications, but in the computer industry as well. On the one hand, the analog copper wire based telephone network is gradually getting replaced and augmented with fibre-optic based digital technology, namely, the Integrated Service Digital Network (ISDN). On the other hand, fibre-optic networks have the increased bandwidth and speeds required to move large amounts of digitized data from one point to another via computer systems. The trend towards miniaturization and the requirement for greater and greater storage capability was facilitated by the migration from floppy disc to read-only memory compact disc (CD-ROM) which is capable of storing about a thousand

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times more data than a floppy disc and has become the medium of choice for distributing multimedia services.

Multimedia Computer

A multimedia computer is a computer that uses the normal output media of display screen, printed hard copy alongwith recorded high-quality audio, high quality still images, animation or recorded motion video. The words 'recorded' and 'high quality' should not be overlooked — they refer to the capability of the multimedia computer to successfully display images, video or sound that has been captured from live sources, much like the capability of a television system. Capturing from live sources is in addition to the computer's inherent ability to generate its own pictures or sounds through software, which we refer to as simulation. This emphasis on real or natural sounds and pictures is important — it greatly enhances the realism of a computer presentation; most importantly, it tremendously expands the sources of materials that we can display or present within a computer. Now, in addition to signing our name to a document, we can use our own photograph or our own voice to sign. If we want to show a real object as part of our presentation,we can simply point a video camera at it and click a button to include that in our work. The possibilities are endless.

Enterprise Multimedia

In a large organisation with many personal computers in place, there are major advantages in connecting all the computers into a digital network, so that they can communicate and exchange data. This becomes even more important when the company also has a large central computing system where all the corporate data resides. Then the network allows the central data to move to and from the PCs as needed to perform the company's business tasks. Such a network is also an ideal environment for multimedia.

Multimedia data objects are often very large and they are usually time-critical, meaning they must be delivered according to an exact time schedule else the presentation may be interrupted. Modern network capability has grown to the point where distributing multimedia via a digital network is now

practical. IBM has articulated a concept, which they all *enterprise multimedia*, where every PC or workstation in an organisation is multimedia ready and the network and its servers can handle multimedia traffic along with the other data. Multimedia objects can be stored at any server and made available to users of the network on demand. The enterprise multimedia concept depends on the use of all-digital multimedia. A hybrid analog-digital system will not work with the digital network. An important possibility, once corporate-wide digital networks are in place, is to use the network for tele-conferencing. Each participant remains in his own office, but by means of a digital audio connection through the network, he can communicate with the other participants, regardless of where they are located. Using the other multimedia data types, such as video, graphics, images or animation, any participant can introduce illustrative material into the meeting to facilitate better communication.

ISDN for Multimedia

ISDN (Integrated Services Digital Network) is valuable for multi-national corporations using data communications to connect international small to medium branch office local area networks (LANs). But ISDN is not just for internetworking LANs over the wide area; it can be used as a high speed, dial up link to the Internet and is well suited for the International Telecommunications Union (ITU)'s recently approved T.120 multimedia conferencing standards. It even supports video conferencing. Since ideas on what exactly constitutes a multimedia presentation vary, the standard allows equipment to support subsets of the specification. For example, two video teleconferencing units sharing a conference with devices that support only audio and still image, or audio only, must be able to work together at the most basic level of voice communication. The premise behind a multimedia teleconference is similar to video, in that groups can communicate effectively while avoiding the cost and time lost in travel.

Emerging Applications of Multimedia

- *Training or education application* : A multimedia computer really shines when used for training or education in a one-to-one situation with a student. The multimedia presentation capability can show the student, material from any kind of source : text, charts, audio, video, animations, simulations or photographs. When these are combined with interactivity, an effective learning environment is created. Multimedia training is also extremely effective in teaching someone how to use a computer program and many recent releases of produc-

tivity and multimedia programs include multimedia tutorials.

- *Information delivery applications* : Many multimedia applications exist in order to give a user access to some class of data. Vast collection of data are in the form of books, catalogs, libraries, audio tapes, video tapes or still photographs. Any of these can be captured in digital format and presented by a multimedia computer; this is called information delivery and other application is the CD-ROM disc.

- *Merchandising applications* : Selling combines infromation delivery with other capabilities such as demonstration, quotation, negotiation, order taking and so on. The information delivery capability is an excellent front end for a program that sells products. Authoring for sales applications is usually done by programming in an authoring language. This is because these applications combine multimedia information delivery with other computer tasks such as preparing orders, contracts or invoices.

- *Productivity applications* : There are many opportunities to use multimedia with productivity applications. Probably the best of these is using multimedia presentations for on-line and tutorials. This class of applications is a combination of information delivery and training. Productivity applications' such as spreadsheets, charting programs or databse programs create screens that are displayed to show the user's data or calculations. It is valuable if the user can add multimedia objects to these screens so that he can use audio or video to support or explain his screens. If the productivity application has multimedia capabilities built in, that is easy; however, it will be sometime before all the productivity vendors do that. Interprocess communication is useful when we have two or more applications running concurrently. One is productivity application and the other is a multimedia server application. A server knows all about multimedia and can run audio, video or other multimedia objects on command from another application via IPC.

- *Teleconferencing* : Although they are essential to the conduct of many business, meetings are expensive propositions, especially when the participants have to travel. Material has to be prepared and printed on paper and everyone has to interrupt their regular work to attend. The technologies of digital networks and multimedia promise to alleviate many of these problems through what is called teleconferencing. With this, one can participate in a meeting without leaving his desk or workstation and he can still obtain the kind of

audio-visual experience he would get by travelling to a live meeting. The key is a high-speed digital network connecting all systems and most corporations, are installing such networks.

- *Geographic information systems* : The management of facilities such as buildings, roads, power lines and railroad tracks is a problem that concerns government offices, utilities and many industries. Specially designed computer database management systems called geographic information systems are avilable to provide on-line support for these types of applications.

Digital multimedia is often viewed in a way that the capabilities now enjoyed by the consumer in the form of television can become interactive. A truly interactive multimedia product can offer much more than television for entertainment, information delivery and education. Using CD-ROM distribution, multimedia titles can be published on a wide range of subjects so that consumers will no longer be limited to the titles that are broadcast — they can view any subject at any time, based on their own choice.

Initially, multimedia enabled a single user to interact with several applications : it was not possible to provide viewing and interactive capability to a number of users simultaneously and on demand. Multimedia networking has provided the ability to dispense information to a wide audience — in office, school or home — in order to entertain, inform and train large number of people in a uniform and consistent manner.

In order to meet such objective, researchers have addressed issues such as speed and bandwidth of network server capabilities, capital investment in multimedia PCs, access to information systems and databases, custom-developed applications, cross-platform delivery and interactive as well as store-and-forward multimedia systems. Only then, it has been possible to organize a 'user friendly' system.

Features of a multimedia system

1. *Audio* is the 'front end' of a multimedia system. It comprises an audio adapter, an audio input device such as a microphone, software to digitize the analog sound, amplifiers and speakers.

2. *Video* is the other major 'front end'. Rapid advances in video digitization technology have enabled video to be harnessed and deployed on the desktop. Realtime video delivery, that is, delivering the presentation 'live' requires a high-speed, high-bandwidth network. Today, real time video feeds such as those used by the Cable News Network (CNN) can be viewed on the desktop.

3. *Video conferencing* is another real-time video application; a video-conference can be point-to-point between two locations or multipoint, which can include several conference sites, depending on the system's capabilities. In several situations, real time video delivery may not be necessary. In such cases a store-and-forward technology is adopted, in which a user can access a library of video presentations from his multimedia computer. The bandwidth and network speed requirements are proportionately lower. Developments in CD-ROM technology, videodisks and laser discs also have assisted video displays.

4. *Animation* is yet another feautre of multimedia capabilities. Two-dimensional (2-D) animation is the most common type today, such as cartoons. However, 3-D animation has mostly been confined to the engineering field like in computer aided design (CAD). As 3-D animation technology matures and becomes more competitive, this feature will also get into applications like on-line tutorials, simulations and virtual reality.

5. *Virtual reality (VR)* applications are programmes that could envelop a user within a 3-D simulated environment of sight, movement, sound and possibly touch in the future.

There are four types of multimedia computer systems. A multimedia application is best created on *a developer workstation* and viewed on an end user computer system deploying digital video capturing devices, minicomputer and studio sound system. *Multimedia on the desktop* would be a low-end system suitable for viewing and interacting with multimedia applications called an MPC level 2 machine running at 25 MHz with at least 4 MB of RAM. *Multimedia kiosk system* would be a computer system generally located in high-traffic area such as railway station, airport, restaurant or office. A viewer can interact with the system via computer running a multimedia application. Portable multimedia systems have been made possible through the revolution in wireless technology. *Portable computer systems* such as laptops, palmtops and personal digital assistants (PDAs) are becoming smaller and lighter in weight, yet possessing considerable processing power, speed and storage capacity. We will briefly look at three most important issues, namely, standardization, privacy, and security issues. There are other issues too, like copyrights, patents, trade marks and trade secrets.

Issues with Multimedia

1. *Standardization*

In order to enable fully flexible development, distribution and widespread deployment of multimedia

applications, the most serious problem is the absence of a common international vendor-independent standards. This is perhaps the one single factor responsible for delay in large scale deployment of multimedia.

2. Privacy Issues

The need for privacy requires that a user should be secure or protected from electronic access, intrusion and surveillance and still be able to interact with the system. It is also necessary that developers should take care not to invade in any way the privacy of people whose names, likeness and images appear in an application. Organizations also have to ensure work place privacy.

3. Security Issues

Another key issue is that of security risks. All electronic information is vulnerable to encroachment in some form or the other and organizations must prevent unauthorized access. Intentional or unintended abuse and accidental destruction of data can prove extremely harmful to the service provider. To gain access, the relevant staff must have the proper authorization to view and interact with the application. The user must be required to establish his identity before the authority to access the application is granted.

Applications of Multimedia Networking

Multimedia offers immense potential today as well as for the future. Let us glance at just a few applications.

A. Video on Demand

This is a user friendly method of providing video programming. The viewer decides when the program will begin and not the TV company. The selected program is instantly delivered to the user, right from the beginning. If someone chooses the same title a second later, it is delivered to that person also from the beginning. The same multimedia title can be viewed by any number of people concurrently, with each individual choosing his own viewing time. Currently there are several cable services offering limited video on demand. Many more service providers expect to offer this service with a much wider range to more and more subscribers before the end of the century. Internet's world wide web is a form of multimedia on demand and is accessed via web browsers.

B. Entertainment

Multimedia networking is probably used most of all in the entertainment industry, where applications are almost unlimited.

C. Interactive Television

Interactive television (ITV) overcomes the drudgery of simply viewing the "tube".

D. Medicine

Information about a patient such as X-ray, magnetic resonance imaging (MRI) scan, photographs, laboratory reports, case histories can be digitized and transmitted to the doctor anywhere anytime. Thus, specialists would not have to physically travel to examine the patient in rural areas where only basic networking equipment is set up to transmit via wireless communication to the hospital.

E. Manufacturing

Multimedia is growing more and more popular in this industry day by day. Touch-screen workstations assist the technician on the assembly line or in the production process and his queries can be answered by the system on touch screen by on-line video instructions.

F. Retail Business

The first use of multimedia technology in retail was made by Sears who introduced the mail order catalogue. Thereafter, many more retail outlets are using multimedia computers as sales tools. The customer can have the product shown in a variety of colors and from which the buyer can see the preview of the play, the concert or the game from his chosen seat before actually making the purchase.

Future Directions

Future technologies will allow the customer to view and manipulate products through virtual reality. Sitting at home, a customer will be able to walk into store, browse, pick up and handle items and make purchases. With the commercialization of the Internet, retailers will have the potential of reaching a much broader audience with their multimedia product catalogs on multimedia network. On the Internet, advertising is already moving from a passive to active form.

Conclusion

Multimedia applications would greatly benefit the area of education and training. In future, it will be possible to link schools and other educational facilities by means of a high-speed, high-bandwidth data communication network in order to instruct and to learn 'online' with greater facilities for in-depth learning. The twenty-first century desktop multimedia applications will considerably enhance the user's pleasure, productivity and knowledge base by providing the capability to access, retrieve, use and exchange information from a variety of domestic and international sources.

References

1. Cole Bernard "The Technology Framework", *IEEE Spectrum*, March 93, Pp 32-38.
2. Z. Klans & F. Florian "Multimedia Rush Into Power", *IEEE Spectrum*, July 94, Pp 44-48.

Instructional Skills of University Teachers
A Study

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Agricultural higher education in India has grown since establishment of the first State Agricultural University (SAU) at Pantnagar. At present, there are 29 SAUs, one Central Agricultural University and four Deemed Universities. Besides, agriculture is also being taught in three central universities, viz Banaras Hindu University, Aligarh Muslim University and Vishwa Bharti. In addition, agriculture is being taught in about 30 colleges affiliated to general universities. Attempts are being made to develop infrastructure in agricultural education and improve capabilities of agricultural human resource under Agricultural Human Resource Development (AHRD) project. There is increasing emphasis on enhancing quality of teaching in classrooms in order to enable students to become more analytical and problem solving. Systematic efforts are being made to organize training of teachers in instructional skills and provide support to inculcate new skills. Keeping in view the need for increasing effectiveness of teaching and lack of such studies in agricultural higher education, this study was undertaken to assess the students' perceptions of instructional skills of the teacher.

Methodology

By using Stratified Random Sampling, 120 respondents were selected from among the students of the college having largest faculty and student size in order to represent variety of teachers and the subject matter. The participants were asked to make their responses with regard to a specific teacher of the current semester with whom they offered a course and keenly observed their classroom activity, irrespective of good or bad teaching. They were interviewed personally in complete confidence. The tool for the present study was developed on the basis of suggestions made by Dosajh (1979). The final tool consisted of five major areas of Instructional skill viz. Entry behaviour, Content organization, Content presentation, Questioning, and Closure behaviour. Data were collected towards the end of the semester so that the students had substantial exposure to the teacher and content of the class about which they were respond-

ing. Arithmetic mean and standard deviation were computed to assess the instructional skills of the teachers in the respective areas.

Findings

Instructional Skills of Teacher

The Instructional skills of teachers were studied in terms of 'Entry behaviour', 'Content organisation', 'Content presentation', 'Questioning', and 'Closure'. Every skill was further classified into sub-components identified for the purpose.

Entry behaviour : Appropriate Entry behaviour sets the pace for teaching. It helps teachers to introduce the lecture in an interesting and original way so as to focus attention immediately on the topic or problematic area. Entry not only serves to draw the attention of the audience but also to provide advanced organizers, so that the audience fully understands the purpose and structure of the lecture and gets ready to absorb the materials to be covered. An attempt was made to know different ways in which teachers begin the class, under the sub heads, Activity of teacher soon after entry; Manner of beginning the class; Manner of specifying objectives; and Techniques of attracting attention of the class as shown in Table 1.

It is evident from the table that majority of students reported that soon after entry, the 'teacher smiles and gives a friendly look' (30.00 per cent), which is followed by 'moves towards the students' (11.40 per cent) and greets students' verbally' (10.00 per cent).

As regards the manner of beginning the class by the teacher, majority of students reported that 'they write topic on the black board' (58.57 per cent), followed by 'reviews last lecture' (34.28 per cent), 'shares purpose of class' (22.85 per cent), and 'asks questions to recall last lecture' (21.42 per cent). It is thus clear that writing of topic on blackboard is the most prevalent practice followed to a lesser extent by review of last lecture.

As far as teachers' manner of specifying the objectives of the day's lessons was concerned, majority of students reported that the 'teachers tell the main points of the lesson' (35.71 per cent) followed by 'writ-

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ing purpose of the lesson on the black board' (34.28 per cent), and 'make an overview of the day's lesson' (11.42 per cent).

About techniques to attract attention of students toward the topic of the day, majority of the students reported that 'teachers asked general questions' (25.71 per cent), followed by 'share personal experience to create interest' (24.28 per cent), 'make pre-designed statement to specify relevance (24.28 per cent). 22.85 per cent of the students reported that 'they do not use any specific technique to attract attention'. Thus, all the techniques mentioned above were almost equally practised.

Content organization : A teacher should design contents to ensure students' sustained interest and learning. Content should be made relevant for the learners. Content load must be well within the learners' capacity and given time limit. Systematic and clear organization of content helps in making sense easily.

As shown in Table 2 majority of students reported that 'teachers made judicious use of time', (84.21 per cent) and 'teachers followed course outline closely' (84.21 per cent). However, 60 per cent students opined that teachers divided each lesson neatly into parts. Only 57.14 per cent of them agreed that teachers used well planned design of instruction.

Content presentation

Sustaining interest of students throughout exposition of the teacher demands effective language, confidence and manner of presentation in order to present the subject matter in a vibrant and lively manner. The teacher must aim to increase understanding of a given content area by personally involving the individuals through effective verbal and non-verbal techniques of class presentation.

Students' opinion regarding teachers' presentation were sought in terms of 'use of examples', 'use of black board', 'use of explanation', 'use of summary', 'movement of teacher in the classroom', 'pace of speaking', and 'language used by the teacher', as shown in Table 3.

Use of examples : Table 3 clearly shows that majority of students (47.14 per cent) indicated that the examples used by teachers were relevant and well designed. 31.42 per cent of the respondents reported that the teachers did not use examples. Rest of the students (15.71 per cent) reported that the examples used by the teachers were often not clear.

Use of black board : As regards the manner of us-

ing black board by the teachers was concerned, majority of the students (28.57 per cent) reported that there was good use of diagrams on the black board by the teachers, while 27.14 per cent of the students reported that the black board was crowded and incomprehensible. Only 25.71 per cent of the students asserted that there is planned and legible use of black board by the teachers.

Use of explanation : Majority of students (52.50 per cent) reported that teachers 'used clear cut and logical explanation', followed by 'loaded with complex and vague terms' (25.71 per cent). The rest of the students (28.57 per cent) reported that the 'teachers were unable to explain at all'.

Use of summary : Majority of the students reported that teachers 'Sometimes' (48.57 per cent) used this techniques, which is followed by 'Never' used this technique (30.00 per cent). 17.14 per cent of the students reported that the teachers 'Always' used this technique in presenting the lecture.

Movement of teachers in the classroom : As shown in Table 3, the students reported that 'teachers moved towards students to talk' (27.14 per cent). 18.57 per cent stated that 'teachers moved from podium while making use of black board'. Only 12.85 per cent students reported that teachers moved to supervise the students at work.

Pace of speaking : As regard the pace of speaking, the delivery of the speech was reported to be 'moderatre' (61.42 per cent) by majority of students followed by 'very fast and difficult to follow' (24.28 per cent). Some of the students reported that the speed was 'very slow and it becomes monotonous'.

Language used by the teacher : Majority of students responded that the 'teachers' talk in a very clearly audible tone' (45.71 per cent), followed by 'they use chaste language with good pronunciation' (28.36 per cent) and 'very coherent in conveying ideas to the students' (18.57 per cent). Only 18.57 per cent students reported that 'they made grammatical mistakes'.

Questioning

Questioning is one of the major aspects of classroom communication. Questioning is good to stimulate interest of students in the content of the class and make them active. Phrasing questions according to ability of the students helps in decreasing anxiety and frustration and promotes understanding. Students' opinion on questioning skills of teachers have been reported below.

Nature of questions asked : Table 4 clearly indicates that the teachers' asked questions, which 'stimulate thinking about the topic/lesson' (39.32 per cent), followed by the questions which 'evaluated understanding of the topic taught to the students' (22.47 per cent). Very few students (16.85 per cent) reported that the 'Questions were intended to elicit something from them', followed by the 'questions which seemed quite easy and superficial' (12.35 per cent).

Target of questions : Majority of the students reported that 'whole class was target (50 per cent) of questions' followed by 'individual student was the target' (42.85 per cent). Only a few responded that 'a particular group or section of the class was the target of teachers' question (7.14 per cent).

Teachers' response to students' answer : Majority of students reported that the 'teachers praised correct/partially correct answers' (50.70 per cent) followed by 'accepting whatever answer came' (29.57 per cent). Some of the students (12.67 per cent) also reported that 'teachers generally found faults with students' responses'. 7.04 per cent stated that 'teachers ignored whatever the answer came'.

Teachers' response to wrong answers : As regards to teachers' response to wrong answers given by the students, majority of the students reported that 'teachers rejected it summarily'. (43.05 per cent) followed by 'assist them through further questioning' (40.27 per cent), which lead them to correct the answers by themselves. A few of the students (16.66 per cent) made no comment over it.

Teachers' encouragement to ask questions : Majority of students (45.58 per cent) replied that teachers' never encouraged them, while the rest (54.41 per cent) reported that they did.

Teachers' tact in dealing with students' questions : Majority of students (65.71 per cent) reported that the 'teachers 'explained with interest', followed by 'Answer it casually' (14.28 per cent). Only a few students reported that the teacher 'showed displeasure when students asked the questions in classroom' and 'teachers never asked question in the class' (10.00 per cent each).

Teachers' strategy to use students' participation : Majority of students reported that teachers used students' participation in discussion (40.74 per cent); followed by writing students' output on the black board (8.64 per cent) and 'involving the students in the classroom management' (3.70 per cent). However, 41.97 per cent of the students said that this activity (Students' participation) was never seen in the classroom.

Closure Behaviour

Closing lecture by giving the summary of major points presented during the lesson, helps the audience in comprehending the broader conceptualization of the topic. The data related to the closure behaviour of teachers have been shown in Table 5.

As is evident from the Table, students reported that teachers abruptly ended the class when time was over (55.07 per cent) followed by teachers made review of the class by themselves (28.98 per cent). Small percentage of students indicated the teacher asked students to explain what had been taught in the class (7.24 per cent), asked questions to recapitulate what was taught in the class (5.79 per cent) and gave assignment for the next lecture (2.89 per cent), respectively.

As regards references given by the teachers to the students for further reading, majority of students (51.42 per cent) reported positively to this statement. They also reported that at the end of the class, teachers announced the topic of the next class (51.00 per cent).

Discussion

Students' perceptions of teachers' instructional skills, based on their intimate observation of teachers, are quite revealing. Entry behaviour of teachers has many a gaps like a very small section of sampled respondents have viewed that teachers greet students verbally (10.00 per cent) or move towards students (11.40 per cent) and give preview of lesson (11.42 per cent). Teachers' verbal and non-verbal communication in the beginning do attract students and create motivating atmosphere. Similarly giving preview of the lesson helps students to get ready to absorb the materials to be presented. Use of techniques to attract students' attention have been less evident meaning thereby that such skills are not in use in most cases. However, most students reported that teachers organise contents logically, follow the course outline and make judicious use of time. This is the most positive aspect about teachers presentation. Teachers' use of examples and black board are not quite common. Questioning skills also seem wanting on many counts. Closure skills are rarely practised. Thus, it can be said that, there is need for orientation of teachers in general, about the important instructional skills. This seems quite in parity with the findings of Prakash and Kumar (1996) who reported that there was general lack of awareness among teachers of agricultural universities about educational concepts. Similar trend was reflected in their use of audio-visual media.

Table 1 : Students' perceptions of teachers' "Entry behaviour"

Teachers' Activities	Students' responses (percentage) N = 120
Activities of teacher on entering the classroom :	
• Smiles and gives a friendly look	30.00
• Greets students verbally	10.00
• Moves toward the students	11.40
Manner of Beginning/starting the class	
• Writes topic on black board	58.57
• Reviews last lecture	34.28
• Shares purpose of class	22.85
• Asks questions to recall last lecture	21.42
Manner of specifying objectives	
• Tells main points	35.71
• Writes purpose on black board	34.28
• Gives an overview of day's lesson	11.42
Technique to attract attention	
• Asks general questions	25.71
• Shares personal experience to create interest	24.28
• Makes predesigned statement to specify relevance	24.28

Table 2 : Students' perception about "Content organization" by teachers

S. No.	Manner of content organization	Students' responses* (percentage) N = 120
1.	Judicious use of time in classroom	84.21
2.	Followed course outline closely	84.21
3.	Made attempt to divide each lesson clearly into distinguishable parts	60.00
4.	Used well planned design of instruction	57.14

*Multiple responses

Table 3 : Students' perceptions about "Content presentation" by teachers.

Activities	Students' responses (percentage) N = 120
1. Use of example	
• Relevant, well designed	47.14
• Not used many examples	31.42
• Often, not clear examples	15.71
2. Use of black board	
• Good use of diagram	28.57
• Crowded & incomprehensible	27.14
• Well planned, legible	25.71
3. Use of explanation	
• Clearcut, logical	52.50
• Loaded with complex terms	25.71
• Unable to explain at all	28.57
4. Use of Summary	
• Sometimes	48.57
• Never	30.00
• Always	17.14
5. Movement of teacher in classroom	
• Move towards students to talk	27.14
• Move to black board	18.57
• Move to supervise students work	12.85

6. Pace of speaking	
• Moderate	61.42
• Very fast	24.28
• Very slow	11.42
7. Language used by teacher	
• Clearly audible	45.71
• Chaste language with good pronunciation	28.36
• Very coherent in conveying ideas	18.57
• Make grammatical mistakes	18.57

Table 4 : Students' perception about "Questioning skill" of teachers

S.No.	Component of Questioning Skill	Students' responses (percentage) N = 120
1.	**Nature of the question**	
	• Questions often stimulated thinking	39.32
	• Most questions evaluated thinking	22.47
	• Questions were intended to get students response	16.85
	• Questions seemed easy and superficial	12.35
2.	**Target of questions**	
	• Whole class	50.00
	• Individuals	42.85
	• A Group/section	07.14
3.	**Teachers' response to students' answer**	
	• Praised for correct/partial correct answer	50.70
	• Accepted whatever answer came	29.57
	• Often finding faults with answer	12.67
	• Ignores the answers	07.04
4.	**Teachers' response to wrong answer**	
	• Reject summarily	43.05
	• Help through further questioning	40.27
	• Cannot say	16.66
5.	**Teachers' encouragement to ask question**	
	• Yes	45.58
	• No	54.41
6.	**Teachers' tact in dealing with students' questions :**	
	• Explained with interest	65.71
	• Answer it casually	14.28
	• Show displeasure	10.00
	• Such condition never happened	10.00
7.	**Teachers' strategy to use students' participation**	
	• Discussion with students	40.74
	• Write output On black board	08.64
	• Involve in classroom management	08.70
	• Strategy not used at all	41.97

Table 5 : Students' perception about "closure behaviour" of teachers (Multiple response)

S. No.	Closure behaviour of teachers	Students' responses (percentage) N = 120
1.	Abruptly left the class, when time was over	55.07
2.	Making review of the class	28.98
3.	Getting students' feedback about the lesson	07.24
4.	Asked recapitulary question	05.79
5.	Assignment for the next class	02.89
6.	References given to look further	51.42
7.	Tell topic of the next class	51.00

Intellectualism Sans Humanism

Dr. S. Rame Gowda, Chairman, All India Council for Technical Education, delivered the Convocation Address at the Tenth Convocation of the Avinashilingam Institute for Home Science and Higher Education for Women (Deemed University), Coimbatore. He said, "We seem to be producing very brilliant men and women but unfortunately most of them are brought up bereft of moral and ethical values. By producing mere intellectuals without being charged with the celestial feeling of humanism, feeling sympathetic to the miseries of the oppressed and the aggrieved, the very purpose of education is lost." Excerpts

The world is changing very fast particularly after globalization and liberalisation. In this competitive world, the most competent alone would survive against the competitors in the form of multinational companies and NRIs zeroing in on to this country from different nations across the globe. The unfathomable challenges posed by the fast-changing socio-economic, business and commerce scenario are to be faced by you if you want to survive economically. Today if you were to continue in your profession, and if you are to contribute for the socio — economic development of this country, you have to necessarily equip yourself with expertise not only in the field in which you have graduated, but in other allied fields as well, and only then will you be wanted by the end-users. It has also become very essential that irrespective of your field of studies — Commerce, Economics, Physical Sciences, Home Sciences and even Literature — an exposure to the Information Technology (IT) is a must for you to keep yourself posted with the changes filtering into your own field. Information Technology in the form of Internet, Intranet and Extranet has come to play a very vital role in almost all phases of our life.

In fact IT and interactive computers have given rise to what is termed as "virtual reality" which has been fast developing to occupy a central place in the process of teaching and learning. Virtual libraries, virtual laboratories and virtual universities are no longer sheer concepts but have already come to be established in different parts of the world. It has become necessary particularly for the youngsters like you who are going to manage the development of this country to work very hard so that the country could be counted amongst the comity of developing nations in the world. You should get exposed to different methods of accessing and retrieving information through this media from different parts of the world. This sounds very tough and unsurmountable but young graduates could measure upto the expectations if you strive hard to develop that capability. This is the only way to live with this changing world, this is the only option to be able to float along with other developing countries.

We find, of-late, that there has been an increasing demand to start professional colleges, particularly engineering colleges, MBA and MCA through-out the country. Even a well directed university like this meant for human Sciences and other liberal Arts and Science subjects, craves to start technical courses like MCA, MBA and other engineering subjects because of the lure of getting job opportunities and more than that getting opportunities to go to advanced western countries, particularly USA. While I am not against this trend and in fact, AICTE has been liberally sanctioning technical courses to exclusively women students, time has come for us to take a broader outlook. In this fast, money-dominated world, all the brilliant children of ours are driven to lay total emphasis right from their school days to prepare themselves to becoming only doctors and engineers, and now computer programmers. This tendency, unfortunately encouraged blindly even by the parents, has come to play a great havoc in the development of Arts/Science and Literature. It is not a secret any more that only left-outs, barring a few exceptions, who fail to get admissions in engineering and medicine and other professional courses turn to Science and Arts. This mindless desertion of Science and Arts has has almost dried out all new meaningful scientific advancements and literary works in this country. It is unfortunately forgotten that Science is the mother of all professional courses and if a country does not come out with meaningful and resourceful research and development works in the field of Science and Arts, then that country in the long run would not be able to survive on its own. In this changing scenario, we have to be on our own because nobody will be willing to part with the latest knowhow as everyone is bent on making

quick money by putting R&D concepts into commercialisation. It is, therefore, necessary for all of us to think seriously in this direction and then evolve viable attractive methodologies and strategies to attract brilliant students into the fold of Science and Arts and other creative areas. This university should play a leading role in this direction besides offering professional courses like Engineering, in sensitizing other players in the game. The outgoing graduates of this great university should also contribute to this endeavour.

It is a wrong concept that only professional degree holders make money as could be seen by everyone that a bright advocate can earn thousands of rupees by attending one or two cases in the High Courts and Supreme Court. While I concede that all young advocates would not be able to rise up to the sky in the very first go, I am sure, if young and brilliant boys and girls take to legal profession with the ardent desire of becoming leading civil and criminal lawyers, then it is not difficult for them to make a fortune in this country alone. It is not necessary for you to take to technical courses to go to USA although I am not opposed to those going out of the country, to make money. If you intelligently choose fields like legal profession or even Chartered Accountancy you can create quite a bit of wealth in just a couple of years. I therefore, take this opportunity to call upon you to explore different, divergent avenues and choose the one that fits into your mental and psychological outfit so that you could love your job without any coersion or compulsion and at the same time, you can earn money and stand on your own.

I am sure that the young graduates of this university, who would have been systematically taught right from the day one the need to help the poor and the needy, would rise to the occasion. I am certain that the outgoing graduates would surely give a serious thought to this call and try to help build up our nation and should not be simply influenced by the monetary considerations alone. Before I conclude, I would like to appeal to you to bestow your attention for a while as to what is happening in and around our society. We seem to be producing very brilliant men and women but unfortunately most of them are brought up bereft of moral and ethical values. By producing mere intellectuals without being charged with the celestial feeling of humanism, feeling sympathetic to the miseries of the oppressed and the aggrieved, the very purpose of education is lost. You should endeavour to develop the human touch that is required while dealing with all sections of the society. If we do not make the students to be proud of their cultural heritage of this great nation with its celebrated age old civilisation, particularly the women who will have to play a very good role in bringing sanity to the society, there is no meaning for this so called higher education. In whatever sector of the society you work, the qualities of heart and soul, moral and ethical values should prevail over the debased devilish urge to make only money at any cost.

International Congress on Immunology

The President, Mr. K.R. Narayanan, called upon scientists to narrow the gap between medical discoveries and their applications to find cure for diseases to relieve human pain, distress and misery. He was inaugurating the 10th International Congress on Immunology in New Delhi recently. He said science, industry and governments should join hands so that the fruits of research could be made available to the common man with minimal delay and at an affordable cost.

One of the most audacious adventures of the scientific mind that was taking place in the world today was in the field of biology and bio-technology. "Though it seeks to unravel the mysteries of life and nature, and even dares to play God, it has not succeeded in the search, probably because the ultimate mysteries of life are themselves in a state of flux or are involved in an intricately inter-related evolutionary process. But the scientific research has yielded magnificent results of great significance to human welfare in agriculture, industry, medicine and other fields," he said.

The major international scientific effort being undertaken today in which scientists in India were involved was to evolve a vaccine against the AIDS virus. Also, vaccines against non-communicable diseases like cancer were the subject of scientific research. "While antibiotics and vaccines are some of the greatest blessings of modern medical science to humanity, their excessive use as well as reckless lifestyles of people are rendering them less and less effective. With the over-

use of antibiotics even for common cold and ordinary ailments, the immunity of the human body has been put at stake," he said.

Calling upon scientists to develop alternative systems of medicine, Mr. Narayanan said these were becoming popular in the West, as they were holistic, curative and preventive and dealt with the subtle relationship between body, mind and environment. "It has been said that the Indian system of medicine, Ayurveda, if rejuvenated, and subjected to severe scientific research, analyses and tests, could perhaps give a holistic dimension to modern medicine".

The Minister for Human Resource Development, Dr. Murli Manohar Joshi, asked the bio-technologists to dwelve on each of the challenges facing humanity and join hands to draw strategies for combating the biological scourge. He asked them to touch upon the new horizons of immunology and enthuse the young scientists about the opportunities in this field.

Designing Work Centric Organisations

The Department of Psychology of the University of Delhi recently organised a discussion on the Role of Values in Designing Work Centric Nurturant Organizations.

Prof. Jai B.P. Sinha, Professor of Psychology & Management, ASSERT Institute of Management, Patna and currently visiting Professor at the Department of Psychology, University of Delhi made two presentations on the basis of studies conducted over a period of about ten years. In this presentation

he attempted to explore the role of values in designing work centric nurturant organizations in India.

Prof. Sinha proposed that Indians, in contrast to westerns, prefer to (a) remain embedded in their ingroups, (b) maintain hierarchical, (c) personalized relationships, (d) tolerate differences from and lapses of others rather than confronting them, and (e) discharge their duties and obligations rather than going by their own wishes. In order to test these propositions Prof. Sinha conducted studies at seven different locations (Patna, Varanasi, Lucknow, Kharagpur, Baroda, Bangalore, and Madras) in this country and reported his perception of what people in general believe, practice, and prefer (i.e., operative values). It was found that people of Patna and Varanasi presented a contrast to those of Bangalore and Madras, the former endorsing the values more strongly. The study substantiated the perception that Indians value embededness, hierarchy, and personalized relationships.

In another study Prof. Sinha explored how societal values affect organizational values, and the two, independently or jointly, shape managerial beliefs, practices, and preferences in eight organizations located in and around Jamshedpur, Patna, Ahmedabad, and Harihar (TN). It was noted that the societal beliefs and practices generally had adverse effects on organizations' concerns for equality of work, emphasis on merit and fair play (work centric) and HRD activities as well as on managers' task orientation. Some of them led to centralized decision making and non-work climate, the former, surprisingly, also facili-

tated managers' task orientation. Furthermore, work centric organizations fostered greater task orientation, job satisfaction and identification, role clarity, and personalized relationships. The managers at a relatively more developed location in the country (i.e., Ahmedabad), compared to those in a less developed place (i.e., Patna) perceived the people in their society as less selfish, less status and power oriented, less family bound, and less emotionally disposed. They judged their organizations as more work centric with stronger emphasis on HRD. It seemed that the impoverished condition of a setting adversely affects work culture of the organizations located in that setting.

Extending the work in medium size organizations in Bihar using case study approach Prof. Sinha examined whether the backwardness of the state indeed pollutes the work culture by creating amoral familism and poverty syndrome in these organizations. The cases revealed that most of the organizations were in bad shape. Physical conditions of work were unhealthy. Safety measures were inadequate. Managers and supervisors extracted maximum work from their workers without caring for them. The owners valued machines more than men who seemed to be used to the hard, hazardous, and unhygienic work conditions. All the workers wanted was to be duly compensated by higher wages, more benefits, and medical and housing benefits. They wished that the management should treat them like family members and meet their needs.

The cases in the final study (Modi Xerox, Maruti Udyog, and Tata Steel), on the other hand, highlighted the centrality of work

in them. They were large and leading organizations which consistently made profit. They all had track records of maintaining strong work norms, western systems of management, foreign collaborations or exposures, and leadership in their sector. Modi Xerox was under strong influence of Rank Xerox in maintaining a high quality of products and after sale services by adopting the latter's managerial systems and procedures without any concern for Indian social values. Maruti, because of its Japanese collaboration, had group based managerial practices and generous welfare measures. Tata steel had involved an integrated management in which western systems were permeated with centralized power, personalized relationships, generous welfare measures, and a high sense of social responsibility.

Prof. Sinha concluded that his studies suggested a design for work centric nurturant organizations in which (a) the basic requirements of healthy and hygienic conditions of work, and satisfactory service conditions were met and the employees reciprocated by their disciplined, punctual, hard and sincere work, (b) the systems and procedures were developed and maintained to guarantee a high quality of products and services at the lowest costs for maximizing customer's satisfaction, (c) the management was nurturant — taking familial care of the employees who were respectful to their superiors and committed to the organization, and (d) a high sense of social responsibility was shown to the community. In creating a work centric nurturant organization, the last three components were blended by a balancing process, keeping in view the strengths and the weakness of the organization and the demands of its business environment.

Seminar on NCTE

A one day Seminar on the theme 'Why do we need N C T E?' was recently organised by Prof. R.P. Singh, former Dean (Research), NCERT. It was addressed among others by the President, Indian Association of Teacher Educators, Prof. C.L. Kundu, currently Vice-Chancellor, H.P. University, Shimla and Prof. B.K. Passi, Pro-Vice Chancellor, and UNESCO Chair in Distance Education for Teachers, IGNOU. Prof. G.D. Sharma, Secretary, University Grants Commission inaugurated the Seminar.

In his welcome address, Prof. R.P. Singh observed that people have very high hopes from the NCTE. The grey areas which have come to light in the short duration of four years of NCTE Act pertain to its functioning, priorities and jurisdiction. He hoped the Seminar will come out with practical suggestions so that NCTE becomes a vibrant organisation.

Inaugurating the Seminar, Prof. G.D. Sharma, Secretary, UGC raised the issue of overlapping of functions and areas of jurisdiction among several government bodies and felt the solution lay in cooperation and mutual respect. Prof. C.L. Kundu cited the case of how the UGC Panel on Education had come in conflict with the NCTE regarding norms circulated and the syllabi/curriculum prepared. While Prof. Passi saw the need for NCTE at the apex, he pleaded that they should become more open and co-operative. Isolation and dominance were no good.

Twenty Seven University/ College teachers from UP, Haryana, HP, Punjab and Delhi participated in the Seminar.

The Seminar unanimously resolved to request the Government of India through MHRD to get the working of the NCTE reviewed on a priority basis with particular reference to the following points :

a) Without challenging the stipulations of the NCTE Act, the grey areas of jurisdiction, policy making, priorities & research dissemination etc may be clearly defined. Currently the NCTE over-rides the functions and jurisdictions of bodies like UGC and the universities which are essentially academic and policy laying institutions.

b) NCTE may be called upon to undertake research to base the norms they were fixing like why the size of a room has a bearing on the cognitive functions of student trainees, or the number of days a Teachers' College is open should determine the quality of skills, a teacher-trainee could learn etc. In brief, the optimum size of rooms and the number of days be decided by research.

c) NCTE should justify as to why the curriculum they have prepared is superior to the one already prepared by the UGC or the NCERT. Research should be conducted to find out whether Teacher Training is only part skill area or wholly information based.

ISTE-AICTE Undertake Learning Material Project

The Indian Society for Technical Education (ISTE), in collaboration with the All India Council for Technical Education (AICTE), is reportedly preparing new learning material for all the courses in electronics, computer science and allied subjects such as instrumentation and electrical engineering.

The final printed syllabus is expected to be out by middle of next year and will be circulated to all the universities, engineering and technical institutes in the country.

The Rs. 100 million "learning materials project" has been mainly funded by the Agencies for Swiss Development Corporation (ASDC). The new learning material, to be made available as text and reference books, will cover the latest developments in the fields.

ISTE programme director Dr. K.P.P. Pillai, who was in Pune recently to attend the western zone convention of the society, said that "all the universities are teaching outdated syllabus to their students in these technical subjects, the study material for which needs to be updated regularly, given the advancements occuring in these fields."

The books will be of two types, one type covering the standard syllabus suggested by AICTE and the other touching upon the frontier areas of various universities.

In the first phase of the programme, ISTE will identify expert authors in respective subjects within the country.

While on the one hand, emphasis is being laid on revitalising the content of the technical courses, on the other, areas such as presentation quality and absorptive factor of the contents is being worked upon. "A steering body comprising experts from the Swiss funding agency, ISTE and AICTE will strictly monitor the quality of content of the learning material", Dr. Pillai said.

He said the course material, with assistance from AICTE, will be circulated to all universities and major technical institutes as standard syllabus learning material.

ISTE also plans to regularly update the syllabus. "The learning material will be updated once in every three years to accommodate new concepts, topics and subjects depending on the developments occurred," Dr. Pillai said.

ISTE also plans to print the new textbooks on a large scale so that they are made available to students and teachers on demand. "The books will not only be completely refined but will also be sold at very reasonable rate for the benefit of students," said Dr. Pillai.

Incorporating Human Rights Education in Syllabi

A seminar on 'Incorporation of Human Rights Education in the School/College Curriculum' was recently organised by Mother Teresa Women's University (MTWU), at Kodaikanal. Mrs. Yasodha Shanmugasundaram, Vice-Chancellor, MTWU said it was the duty of educators to introduce a very basic understanding of human rights in the syllabi.

Even the right to education guaranteed by the Constitution remained merely on paper and we were far from the ideal of providing education to 100 per cent of our citizenry, she added. The problem, she said, was not the lack of resources, but rather the lack of will power to implement the Constitutional guarantees. Politicians found it convenient and beneficial to keep the voter population in ignorance.

Mrs. Shanmugasundaram also stressed that society was convinced that education was a priority for male children. This situation must change and the totality of women must be integrated into the mainstream, through education. The educational system must also be made viable, serviceable and meaningful to society, she said.

Dr. Gulab Chaurasia, President, Council for Teacher Education, highlighted the relevant provisions of the Universal Declaration of Human Rights and the Rights of the Child. Any forum

working in the area of human rights would have to operate on the basic assumption that citizens had to be informed of all the provisions in the Constitution and their rights. Participants of the seminar could evaluate three options while drawing up revised syllabi : add new subjects, add a new topic to every subject and integrate the topics with every subject and discipline. Innovative teaching techniques used in classrooms would draw the interest of children to such issues. In addition, short duration training courses must be held to train resource persons in the field.

Ms. C.K. Gariyali, Vice-Chairman, Science City, outlined the history of denial of rights to women of the country and showed that a great gap existed between Constitutional provisions and what was actually being implemented. There was a reluctance to share power with women at every level, she added. Dr. S. Lakshmi, former Vice-Chancellor, MTWU, said human rights education must be interwoven into the general curriculum.

IUCAA Post-Doctoral Fellowships

The Inter-University Centre for Astronomy and Astrophysics (IUCAA), invites applications for post-doctoral fellowships in astronomy and astrophysics. The duration of the fellowship is flexible within a range of one to five years, with the possibility of conversion to a tenured position. IUCAA offers challenging opportunities to young research workers in theory, observation and instrumentation in A & A. IUCAA plans to have a 2m optical telescope operational during 1999 and there will be special opportunities for optical astronomy and related instrumentation. Candidates should apply to The Coor-

dinator, Core Programmes, IUCAA, Post Bag 4, Ganeshkhind, Pune-411 007, India, with curriculum vitae and list of publications and arrange for three confidential references to be sent independently. All the relevant material should reach IUCAA by December 25, 1998. Candidates will be informed of the result by February 15, 1999. The fellowship will normally commence during 1999. Accommodation on the campus will be offered to all post-doctoral fellows. For further details, contact the Coordinator, Core Programmes, IUCAA.

Virtual Conference on Information System

A Virtual Conference on Library/Information System & Student Support is being organised from November 10-30, 1998 by the Commonwealth of Learning, Vancouver, Canada. For joining the conference send an e-mail message to <majordomo@hub.col.org> giving the following information in the message : Topic of the Virtual Conference in an abbreviated form i.e. 'li' for Library/Information System & Student Support, and your e-mail address i.e. <rshukla@uod.edu.in> e.g. subscribe li rshukla@uod.edu.in

Weaker Sections Since Independence

The Academic Staff College, Andhra University, recently organised a Seminar on Development of Weaker Sections During Fifty Years of Independence. The themes identified for discussion were (1) Economic Development, (2) Educational Development, (3) Social and Cultural Development, and (4) Social and Political Oppression.

In the inaugural function, Prof. B. Sarveswara Rao lamented that not much attention had been paid by social scientists to the theme of

the subject 'Development of Weaker Sections'. They were concerned more about macroeconomic issues and no systematic attempts seemed to have been made to conceptualise and study the problems of weaker sections. The concept 'Weaker Sections' was a broad based one that could include all those who were subjected to deprivation and exploitation. It included SCs, STs and those who were below the poverty line and women. Though all women were not poor, they were deprived of the rights and therefore came under weaker sections. Prof. Rao mentioned that it was the socialistic state that was always found to be forward looking and development oriented. Whereas, welfare state was protective and was not so much of development oriented.

Prof. Rao said that Amartaya Sen indicated that in countries like India, the state should spend more on the social sectors, like education, health, skill development, so that it would enhance the base and the quality of weaker sections. There were cultural issues that were responsible for exploitation and deprivation of women. It was here that the attitudes of the people were to be transformed through media and artists. It was possible to transform the society without compromising aesthetic values. He said that even after 50 years of independence we had failed to change the ethos of the political process and enhance the social sensitivity of political leaders. Liberalisation was good, but the problem of monitoring and helping the weaker sections could not be neglected by the state. It was in this context, the nature of the state, public interest litigation, panchayat raj institutions, fascisism, and democratic pluralism were to be examined seriously as to what extent they enhanced the capabilities of weaker sections.

The following major conclusions emerged after detailed deliberations : It is necessary to implement strict land reforms so that the poor can get land for their survival; Occupational/artisans' co-operatives are to be established for each caste starting from the village level upto the state level; The traditional occupations of the backward classes, SCs are to be modernised and protected from encroachment by forward castes; The state should direct public sector banks to provide soft loans for the development of weaker sections; The reservation Bill for women must take into consideration the proportionate representation of SC, ST and OBC Women; The effective implementation of 1/1970 Act of Tribals should be ensured to protect the interests of the STs; The 2001 census must collect information on each caste; The Govt. of Andhra Pradesh may issue the Government Order extending the rule of reservations for the posts, of professors to SC, ST, and OBC though they had issued a GO for reserving posts for Women in professor post; Proportionate budget allocations be made for the population of SC, ST and OBC; The backlog posts of reservation categories at the state and central level be filled up immediately; The PCR and other Acts be effectively implemented to check the increasing number of atrocities on dalits; The state must take special interest to promote enrolment of these sections in vocational courses; The state should introduce an unemployment allowance for the unemployed among the weaker sections particularly at the graduate and Postgraduate level; The rule of reservation for weaker sections be extended to private sector; Rule of reservation in Legislature bodies like Assembly, Panchayat, Co-operative Bodies, Universities and Planning Boards etc be strictly enforced; The curriculum at the school stage should contain the views of social revolutionaries like Phooley, Periyar, Ambedkar etc; The weaker section students must be provided with orientation to improve the language skill etc; The state government should establish a separate rural university where the problems of the weaker sections, particularly with reference to the occupational, technical and social problems will be studied and developed; The rule of reservation be observed in the Govt. aided private colleges and other institutions in the state for appointments and admissions.

concern while planning for the increased production."

"Despite favourable trends in agriculture, both poverty and malnutrition still remain our serious problems", Dr. Rai observed. It was estimated that one out of every five persons still did not have means to buy two square meals a day and around 100 million children below 5 years of age were protein energy malnourished (PEM) and 40 per cent of population consumed less than 80 per cent of the energy requirements, he added.

He observed that growth of population was a matter of global concern, adding that all efforts on food front often got nullified due to increasing population pressure. He said by the year 2050 when the world. population would be around 11 billion, the Indian population would cross the 1.5 billion mark, and India would be the most populous nation surpassing China.

In fact, he pointed out, India needed to produce additional 5 million tonnes of foodgrains annually besides bringing increase in marine and livestock production.

Suggesting measures to meet this demand, Dr. Rai said that we should concentrate on breaking the crop yield barriers and maximize the productivity in rainfed areas which constituted 68 per cent of the total cultivable land. Besides more financial support to agricultural research and education needed to be granted, he said, adding "only those nations will be able to meet future challenges successfully which will fund their agricultural research well".

He said India must spend at least 1-2 per cent of agricultural GDP on agricultural research and education in order to meet new

News from Agricultural Universities

Conference on Food Security

A four-day international conference on food security and crop science was recently held at CCS Haryana Agricultural University, Hisar. The conference was organised by the Society for Sustainable Agriculture and Resource Management in collaboration with the Max Mueller Bhawan (MMB), New Delhi and attended by over 300 delegates from India and abroad.

Inaugurating the conference, Dr. Mangla Rai, Deputy Director-General, Indian Council of Agricultural Research (ICAR) said, "Food production will have to be accelerated substantially in the next 2-3 decades if we have to meet the growing demands of the teeming population successfully. Also, productive employment for the poor, access to food and nutritional security should be paradigms of

paradigms successfully. He also advocated quality, technical skills and management of agricultural manpower which he said, could improve in consonance with rapidly changing global market needs.

Prof. J.B. Chowdhury, Vice-Chancellor, CCS Haryana Agricultural University, in his presidential remarks, said that the problems of food security, poverty, equity and sustainability were a cause of a common concern. He said despite green revolution and phenomenal growth in food production, the problem of hunger and poverty still loomed large. "If the green revolution is to yield sustained benefits, it has to become evergreen", he remarked.

Prof. Chowdhury said that by 2025 atleast 50 cent more food would need to be produced to feed the galloping population on this planet. This increase in food production, he said, would have to be ensured from declining cultivable lands, as in most of the Asian countries cultivated area was declining due to growth of urbanization and industrialization. Citing India's example, he said, there had been over three fold decline in per capita availability of cultivable land during past 50 years.

The Vice-Chancellor said that to feed the world in next century more multidisciplinary and multiagency efforts were required as there could be scarcity of water due to increasing industrial base and population as well as drop in the use of agrochemicals which were known to cause problems to soil an human health and the environment.

3 He said the agriculture world over had progressed because of free exchange and movement of genetic material. But since we were entering an era of patents and intellectual property rights, the future of world food security would be in serious jeopardy if methods for harmonizing the imperatives of public good and commercial profit were not developed, he pointed out.

Dr. Tilmann Waldraff, Director, MMB said that the conference aimed to draw the attention of the world community towards the problem of food availability.

Dr. S.R. Poonia, Executive Chairman of the Conference said that issues like crop improvement, conservation and management of natural resources, farming system, crop diversification, integrated nutrient and pest management, international cooperation etc were debated in the four-day workshop.

Farm Statisticians Meet

Over 80 animal and farm statisticians from all over the country recently met at CCS Haryana Agricultural University to take part in the annual conference of the Society of Statistics, Computers and Applications.

Inaugurating the conference, Mr. Jaswant Singh, Animal Husbandry Minister, Haryana said that statistics had assumed increasing importance in recent times for policy formulation and execution.

The minister exhorted statisticians, plant breeders, animal breeders and computer experts to work jointly to meet the food demands of the teeming population. He said although Haryana had made headway in cross-breeding programmes it needed collective efforts of animal breeders and statisticians for its further improvement.

Prof. J.B. Chowdhury, Vice-Chancellor of CCSHAU, who presided, appreciated the role being played by agricultural statistics in planning food production. However, he said, the scope for application of statistical techniques had widened with the increased tempo of research in various disciplines of agriculture. He called upon the participants to develop low-cost software packages for the use of scientists.

About applications of statistics, the Vice-Chancellor said that it had played a significant role in hybrid-breeding programmes and led to the development of specialised branches like genetic statistics, population genetics and biometrics, adding that plant and animal breeding programmes were not possible without knowledge of these branches.

News from UGC

Countrywide Classroom Programme

Between 1st and 7th December, 1998 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays.

These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. two days a week i.e. on Saturdays and Sundays. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays only.

. Hindi Programmes are being telecast on Mondays to Fridays from 6.00 to 6.30 a.m.

1.12.98

"Kurja — Anthropoids Virgo"
"Birbhum Terracotta : Reflections of a Changing Society-1 :
The Oldest One"

2.12.98

"Fresh Water Aquaculture —
Learning to Grow with
Fish-2"
"Terracotta : Reflections of a
Changing Society-2 : The
Changing Facades"

3.12.98

"Question Time-90"
"Books in Electronic Age"

4.12.98

"Bookfare : Letters & Diaries"
"Dragon of the North"

5.12.98

"Indian Women : From Rhetoric to Reality — Women : Their
Work & Their Worth-7"
"Hibiscus Rosa Sinesis"
"International Programmes"

6.12.98

"Searching the Frontiers-4 :
The Sol-Gel Process"

7.12.98

"Mahasweta Devi — The
Voice of the Voiceless"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

1.12.98

''एरण : भाग-1''
''पारगत प्रकाश में खनिजों के
प्रकाशीय गुण : भाग-1''

2.12.98

''बाँसुरी : एक अनोखा साज भाग-1''

3.12.98

''स्वतंत्रता के पचास वर्ष''
''मानव जीवन में सहयोग भाग-1''

4.12.98

''परम्परा की एक टूटती कड़ी —
चिड़ाव खयाल भाग-1 : विकास में
नानू राणा का योगदान''
''लोक राग : भाग-1''

7.12.98

''मदर डेयरी''

News from Abroad

Paris Declaration on Higher Education

The World Conference on Higher Education which was recently held in Paris adopted the following declaration.

The declaration states : "In a world undergoing rapid changes there is a perceived need for a new vision and paradigm of higher education, which should be student-oriented, calling in most countries for in-depth reforms and an open-access policy so as to cater for ever more diversified categories of people, and of its contents, methods, practices and means of delivery, based on new types of links and partnerships with the community and with the broadest sectors of society." The main points :

- Higher education should be accessible to all on merit

- A more student-oriented vision of HE

- Core missions are educating, training and undertaking research. Others include the promotion of national and regional, international and historic cultures, the enhancement of societal values and contributing to the development and improvement of education at all levels, including through teacher training

- Emphasis on HE's ethical role, autonomy, responsible and anticipatory function

- All engaged in HE should defend and disseminate universally accepted values, among them peace, justice, freedom, equality and solidarity

- Equity of access; promotion of the role of women

- HE should reinforce its role of service to society, especially in assisting in eliminating poverty, intolerance, violence, illiteracy, hunger, environmental degradation and disease

- Reinforced links with the world of work with efforts devoted to developing students' entrepreneurial skills so that they become job creators as well as job seekers

- Greater diversity in organisation and recruitment methods and criteria

- National and institutional decision-makers should place students and their needs at the centre of their concerns

- Greater sharing of knowledge and expertise across national borders and the need to stem the brain drain, with priority given to training programmes in the developing countries, in centres of excellence forming regional and international networks, with short periods of specialised and intensive study abroad.

ISSED Seminar on Higher Education

The Eighteenth International Seminar on Staff and Educational Development (ISSED) will be organised on 21-24 March 1999 at Muscat, Sultanate of Oman. The seminar is sponsored by Key Consulting, USA, co-sponsored and hosted by Sultan Qaboos Univer-

sity, Oman in Association with H+E Associates, Norfolk, England. The theme of the seminar is Higher Education in the Twenty-First Century.

The topics proposed to be discussed at the seminar include (i) Developing HE Policy for the 21st Century — HE Policy and Human Resource Capital; HE Policy and Concepts of Social Good; HE Policy, Finance and Popular Demand; and Creating a Balance between the different Paradigms of HE. (ii) Dealing with the Effects of HE Globalisation — Quality and Standards in International HE; Coping with Transnational Students, Course Programs & Institutional Partnerships; National Culture and Multi-Cultural University; and Higher Education in Islamic Societies. (iii) The Future Organisation of HE Institutions — Organising for the New Technologies; Meeting the Combined Challenges of Quality Competitiveness & Cost-Efficiency; and Relating to Business, Industry and the Professions. (iv) Staff/Faculty Development for the Twenty-First Century — Staff Development and Media Production; Staff Development for Technology-Based Instruction; Training & Evaluating Higher Edn Teachers; Linking Strategy, Quality, IT and Staff Development; and Staff Development for Non-Academic Staff.

Further details may be obtained from Dr. Chris deWinter Hebron H+E Associates, 12a Church Street Stiffkey, Norfolk NR231QJ, England OR Dr. Ali Sharaf Al-Musawi, Deputy Director, Centre for Ednl Technology, Sultan Qaboos University, PO Box 39, PC-123, Al-Khod, Sultanate of Oman OR Prof. Val Kosky, ISSED, 9051 Minnetonka Blvd., St. Louis Park, MN 55426-2937 USA.

Indira Gandhi National Open University

Schedule of Telecast for the period 1st to 31st December, 1998
6.30 a.m. to 7.00 a.m.

Day/Date	Academic Prog.	Title
1.12.98 Tuesday	Bachelor's Degree Programme	Hydrologic Cycle
2.12.98 Wednesday	Diploma & Certificate Course	Retention of Nutrients
3.12.98 Thursday	Diploma & Certificate Course	Bhojan mein Poshtikta
4.12.98 Friday	Management	Socio-Legal Aspects of Computerisation
7.12.98 Monday	Bachelor's Degree Programme	Sterilisation and Disinfection
8.12.98 Tuesday	Bachelor's Degree Programme	Planning Balanced Diets
9.12.98 Wednesday	Diploma & Certificate Course	Is Your Food Safe to Eat
10.12.98 Thursday	Diploma & Certificate Course	Apka Bhojn Kitna Surakshit
11.12.98 Friday	Management	Marketing Strategy
14.12.98 Monday	Bachelor's Degree Programme	Santulit Ahar Niyojan
15.12.98 Tuesday	Bachelor's Degree Programme	Garbhavastha mein Aahar Niyojan
16.12.98 Wednesday	Diploma & Certificate Course	Convenient Foods
17.12.98 Thursday	Diploma & Certificate Course	Suvidhajanak Khadya Padarth
18.12.98 Friday	Management	Project Evaluation — Perception & Practices
21.12.98 Monday	Bachelor's Degree Programme	Setting up a Food Services
22.12.98 Tuesday	Bachelor's Degree Programme	Bhojan Pariveshan Chalana — Ek Anubhav
23.12.98 Wednesday	Diploma & Certificate Course	Infancy and Pre-School Nutrition
24.12.98 Thursday	Diploma & Certificate Course	Shaishau Avastha Evam Vidyalay se purva ki ayu mein Poshan
25.12.98 Friday	Management	Packaging as a Tool for Market cultivation
28.12.98 Monday	Bachelor's Degree Programme	Natyanuvad Prastuti ki Samasyayen
29.12.98 Tuesday	Bachelor's Degree Programme	Translating Tagore
30.12.98 Wednesday	Diploma & Certificate Course	Nutrition During Pregnancy
31.12.98 Thursday	Diploma & Certificate Course	Sukhijivan ka Adhar Ma, Baccha aur Santulit Aahar

"Doing" Microeconomics Without Excessive Mathematics

Marjorie Fernandes*

Hal R. Varian. Intermediate Microeconomics: A Modern Approach. (4th edn., New York: W.W. Norton & Co., 1996). 1st East-West Press Edition (for sale in India only), New Delhi: Affiliated East-West Press, 1997, Pp. xxiv + 650 + A 38, Price Rs. 195/-.

Starting with its first edition in 1987, this widely used textbook in Microeconomics at the undergraduate level is now in its fourth edition. It has an entirely new chapter (No. 33) on Information Technology wherein basic economic analysis is used to probe a number of issues, e.g. network externalities, information goods, intellectual property enforcement, etc, relating to such a current topic. In addition, the chapter on Monopoly Behaviour (No. 24) has been thoroughly revised to incorporate fresh examples and analyses of price discrimination. Several new examples and additional discussions of some topics in other chapters also form a part of this revised edition.

The book consists of 35 "lecture-sized" chapters each of which can be read at one sitting. There are 18 "core" chapters which should probably be covered in every intermediate microeconomics course. Consumer theory is discussed first and then producer theory in chapters entitled "The Budget Constraint", "Preference", "Utility", "Choice", "Demand", "Market Demand", "Consumer's Surplus", "Technology", "Profit Maximisation", "Cost Minimization", "Cost Curves", "Firm Supply", "Industry Supply", "Monopoly", "Externalities", "Public Goods",

*Department of Economics, Janki Devi Mahavidyalaya (Univ. of Delhi), New Delhi-110 060.

"Equilibrium" and "Exchange". The remaining chapters, which deal with "optional" topics viz., revealed preference, Slutsky equation, buying and selling, monopoly behaviour, oligopoly, intertemporal choice, asset markets, game theory, law and economics, information technology, asymmetric information, uncertainty, risky assets, production, welfare, market and factor markets, that are usually covered in more advanced books, provide a flexible menu to choose from depending on one's interests and requirements. Detailed section-wise contents of chapters at the beginning of the book and the index at its end make it possible to locate a particular topic or an aspect of it quickly.

The book has a unique analytical approach which uses rigorous logical reasoning without being excessively mathematical so that even those students who lack advanced mathematical skills are able to comprehend its contents. It emphasizes the basic concepts of microeconomics and provides concrete examples or their application which enable students to apply them on their own. In accordance with its aim of developing the student's skill to translate any economic story into an equation or a numeric example, the book uses both graphs to provide insight and algebra to calculate quantitative answers to economic problems. Calculus is kept out of the main body of the text so

that it doesn't pose a barrier to the comprehension of students not well-versed in the subject. However, complete calculus appendices to several chapters are provided for students who can handle them. In addition, there is a mathematical appendix at the end of the book to provide a brief review of the mathematical concepts used in the text. Every chapter ends with some review questions, answers to which are provided at the end of the book. For further exercises, the book has an accompanying workbook written by the author with his colleague, Theodore Bergstrom. A free copy of a neat computer programme called "Norton Test-Maker" which can generate new versions of the questions given in the workbook with different numerical values but the same internal logic is also available.

In keeping with its "hands-on" approach and focus on "doing" economics, the book eschews extraneous case studies and decorative boxes found in other books. Instead, it deals directly with fundamental concepts of microeconomics in simple and precise language and uses examples as an integral part of the text. Some of the examples relating to the American context may not be familiar to Indian students — for example, the market for apartments, some adjacent to a university and others farther away, in a medium-size midwestern college town discussed in the first chapter. However, the logic of the explanation provided in the examples can be comprehended even if the examples themselves are not familiar. The special edition of the book brought out for sale in India only could, perhaps, have tried to incorporate examples familiar to Indian students. Even without these examples, however, the book is well worth its reasonable price and is highly recommended for use as a textbook of microeconomics for undergraduates specializing in economics.

COMMUNICATION

The Doping Game

Winning in Sports at all costs does not permit the philosophy of sports to degenerate merely into a competition amongst laboratories, scientists and athletes. Drugs spectre in sports has become widespread that it threatens the health, safety and longevity of many athletes while perverting the original intent of sports. Two of the most commonly abused varieties of drugs by athletes are the Anabolic steroids and stimulants.

Among the stimulants are drugs which contain Caffeine, Ephedrine, pseudoephedrine and are easily available as over the counter drugs and no prescription is required for getting them. Any medicine for cough, cold, flu should not be taken without consulting the team doctor. Lot of cough syrup like Corex, Phensedyl, Actilex contain ephedrine and even Vicks-Action 500 is also amongst the list containing ephedrine.

Stimulants are basically drugs which increase alertness and reduce fatigue and may increase competitiveness and hostility. They are banned because they can produce a psychological and physical stimulus which may improve athletic performance.

The harmful effects of stimulants include aggressiveness, anxiety and tremor which can lead to poor judgement, placing the individual at greater risk of injury; Increased heart beat and blood pressure; and Dehydration and decreased circulation. Complications from these side effects include stroke, cardiac arrhythmias, paranoia, psychosis and even death.

For caffeine to be positive for doping, if an athlete takes 8 cups of coffee in one sitting and be tested within 2-3 hrs only then he is found positive. For caffeine the definition of positive is — concentration in urine exceeds 12 microgram/ml. (1 cup coffee = 1.5 microgram/ml. Amphetamines (stimulants) are used by Baseball and Football play-

ers to increase alertness and concentration. Runners or swimmers may use them to increase energy and endurance. Argentine soccer super star and Former Captain Diego Maradona was banned twice for use of stimulants. This year International Olympic Committee has added certain drugs in the stimulants category as banned drugs namely Bambuterol, Carphedon, Formoterol, Reporterol, Selegiline.

Anabolic Steroids

These drugs are misused in sports to increase muscle strength and bulk and to promote aggressiveness and as a result increase athletic performance. Commonly used anabolic steroids include Orabolin, Stromba, Neurabol, Durabolin, Dacadurabolin, Provironum, Nuvir, Testosterone etc.

These drugs are basically used by weight lifters, sprinters, body builders, power lifters, Shot putters, javelin throwers. I.O.C. this year has added Andorstenedione, Bambuterol, Formoterol, Gestrinone and Reproterol among the banned category. The side effects of use of Anabolic steroids in Females include masculinization (male like features), increased aggressiveness, mood swings, depression, abnormal menstrual cycles, excessive hair growth on the face and body, enlargement of clitoris, deepening of voice. These effects may become permanent with use.

In males the side effects include Acne, increased aggressiveness, mood swings, depression, reduction in the size of testicles, decreased sperm production, breast enlargement, premature baldness, enlargement of prostate gland, potential for kidney and liver dysfunction. The abuse of anabolic steroids by athletes to enhance performance presents an especially difficult challenge to sports medicine.

Previously the oral anabolic steroids if taken 2-3 weeks prior to the competition could be easily detected by using GC-MSD equip-

ment. But at Atlanta Olympics-96, the latest equipment HRMS (High resolution mass spectrometer) was used which could even detect the presence of oral anabolic steroid taken even 2-3 months prior to competition. The HRMS equipment was also used at Kuala Lumpur Commonwealth Games — September, 1998 to detect the presence of oral steroids. Cricket is a non-olympic discipline and dope testing was never done earlier. But according to rules of Commonwealth Games, Cricket players also had to undergo dope testing. India's Cricketer Amay Khurasia had to undergo dope test at the present Commonwealth Games after he had scored 83 runs against Canada.

In Cricket, the only advantage of taking anabolic steroids could possibly be to a fast bowler as it could increase the muscle mass, stamina and endurance. No earlier data on cricket is available regarding use of steroids. A batsman or a spinner will have no advantage from performance enhancing drugs.

Drug testing should be done even in Professional Tennis like Wimbeldon, US Open and other international championships. The only way to deter use of drugs in sports is out of competition random testing which has now been started by International Olympic Committee.

It is most unfortunate that not only the players and coaches are ignorant about the types of drugs banned in sports but about 96-97% of the doctors are even not aware of the list of banned drugs by I.O.C. Unless proper educational programmes are designed for athletes, coaches and doctors the situation appears grim. Sports Authority of India scientists have been taking lectures, seminars for athletes and coaches at various national camps in the country and is a right step in this direction.

Dr. Jawahar Lal Jain
Secretary General,
SAF Games Medical Commission,
WUS Health Centre,
University of Delhi,
Delhi-110 007

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

SOCIAL SCIENCES

Anthropology

1. Barua, Kalyan. Folk markets : Study on transcultural centres in a tribal belt of Western Assam. (Prof A C Bhagabati), Department of Anthropology, Gauhati University, Guwahati.

2. Bhowmick, Mondira A bio social study on B Thalassaemia. (Prof A K Ghosh), Department of Anthropology, North Eastern Hill University, Shillong.

Economics

1. Acharya, Debashis. On some empirical aspects of new monetary aggregates for India. (Dr B Kamaiah), Department of Economics, University of Hyderabad, Hyderabad.

2. Dangi, Kura Lal Agricultural occupational needs and aspirations of educated rural youth for better employment generatic in Southern Rajasthan. (Dr S L Intodia), Department of Extension Education, Rajasthan Agricultural University, Bikaner.

3. Dwivedi, Mukesh Chandra. Gramin yuvakon kee swarojgar hetu prashikshan kee yojana ka gramin arth vyavastha per prabhav. (Dr M P Srivastava), Department of Rural and Co-operative Economics, University of Bundelkhand, Jhansi.

4. Gopal, Meena. Labour process and its impact on the lives of women workers : A study of the beedi industry in Keelapavoor Block of Tirunelveli District, Tamil Nadu. (Prof Imrana Qadeer), Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi.

5. Gupta, Anju. Direct foreign capital investment in India since 1970 onwards. (Dr Rajinder Gupta), Department of Economics, University of Jammu, Jammu.

6 Shinde, Subhash Bhanudas. A study of adoption of groundnut production technology in Satara District of Maharashtra State. (Dr H S Bhoite), Department of Agricultural Extension, Mahatma Phule Krishi Vidyapeeth, Rahuri.

7. Veena Rani. Economic liberalisation in India and its impact on employment in the organised sector. (Dr Rajinder Gupta), Department of Economics, University of Jammu, Jammu.

Education

1. Debal, Prava. Education, employment profile of women : An analytical case study of small scale units in an industrial estate. (Dr Binod Khadria), Zakir Husain Centre for Educational Studies, Jawaharlal Nehru University, New Delhi

2. Madhusudan Reddy, A. A study of the attitudinal changes among the pre service teacher trainees towards the teaching profession. (Dr K Sesidhar Rao), Department of Education, Osmania University, Hyderabad.

3. Surinder Singh. A study of cognitive styles and Mathematical creativity among high school students. (Dr N R Sharma), Department of Education, University of Jammu, Jammu.

4. Vijaya Kumar, T. Concept attainment model of teaching vis-a-vis achievement in Science among secondary school children belonging to different socio economic environments. (Prof P Sandeep), Department of Education, Osmania University, Hyderabad.

Law

1. Bhaskara Mohan, P. Prevention of oppression and mismanagement under the Companies Act 1956 : Problems and prospects. (Dr V Nageshwar Rao), Department of Law, Osmania University, Hyderabad.

2. Radhakrishnan, K. Critical study of concepts of standing in public interest litigation. (Dr Narmada Khodie), Department of Law, Osmania University, Hyderabad.

3. Rechakudu, Bathula. Crime problem in the tribal areas of Andhra Pradesh. (Dr Abdul Rayees Khan), Department of Law, Osmania University, Hyderabad.

Management

1. Madhavi, C V. Management of change in a large organization : A study of Steel Authority of India Limited, 1985-95. (Dr B L Maheshwari), Department of Business Management, Osmania University, Hyderabad.

2. Mallikarjuna Reddy, K. Consumer behaviour and marketing strategies of electronic firms : A study of select consumer products. (Dr A V Satyanarayana Rao), Department of Business Management, Osmania University, Hyderabad.

3. Subbarayudu, T. Visakhapatnam Dock Labour Board : A study of human sector. (Prof B S Murty), Department of Industrial Relations and Personnel Management, Andhra University, Waltair.

Political Science

1. Das, Dibakar Ch. Socio economic development of the scheduled castes community of Barpeta District during the period of the sixth and seventh five year plan. (Dr P D Gogoi), Department of Political Science, Gauhati University, Guwahati.

2. Jagadesh, V. A comparative study of political awareness among two Lamani settlements of Bellary District. (Dr V T Patil), Department of Political Science, Karnatak University, Dharwad.

3 Mulia, Madhumita. Justice at the doorsteps of the people : A study of Lok Adalats in the state of Orissa. Department of Political Science, Utkal University, Bhubaneswar.

4. Rama Kumari, K. Women welfare programmes in Andhra Pradesh, 1970-96 : A policy analysis. (Prof B Gopal), Department of Political Science, Osmania University, Hyderabad.

5. Srinivasamma, M. Constitutional Amendments in India : A study in socio-politico-economic imperatives and implications, 1971-84. (Prof K R Acharya), Department of Political Science, Osmania University, Hyderabad.

Psychology

1. Sitamma, M. Three gunas, cognitive characteristics and self actualization. (Prof P V Krishna Rao), Department of Psychology, Andhra University, Waltair.

Sociology

1. Dutta, Sumanash. House hold fertility behaviour and children's schooling amongst tribals of West Tripura : An empirical analysis. Department of Humanities and Social Sciences, University of Roorkee, Roorkee.

2. Jayashree. Aging and retirement : A sociological study. (Dr A G Mudbidri), Department of Sociology, Karnatak University, Dharwad.

3. Mukherjee, Sharmistha. Aspects of distribution, accessibility and utilization of health care facilities in urban Delhi. (Prof Sachidanand Sinha), Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

4. Soman, Krishna. Social dynamics of women's health : A study of Bolpur Block in the District of Birbhum. (Prof Imrana Qadeer), Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in the AIU Library during October 1998.

EDUCATIONAL PHILOSOPHY

Ambrose Pinto, S J. Education for human values. J of Hr Edn 20(3), 1997, 351-9.

EDUCATIONAL PSYCHOLOGY

Boyle, Peg and Boice, Bob. Best practices for enculturation. Collegiality mentoring and structure. New Directions for Hr Edn 101, 1998, 87-94.

Johnson, David W and others. Cooperative learning returns to collage. Change 30(4), 1998, 26-35.

Lapidus, Jules B. If we want things to stay as they are, things will have to change. New Directions for Hr Edn 101, 1998, 95-102.

Mehta, Neepa. Interactive learning climate. J of Hr Edn 20(3), 1997, 345-50.

Will, Anne M. Group learning in workshops. New Directions for Adult and Continuing Edn 75, 1997, 33-40.

EDUCATIONAL SOCIOLOGY

Harayama, Yuko. The contemporary university. Its socio-economic environment. Hr Edn in Europe 22(3), 1997, 275-92.

Monasta, Attilio. Higher education as the producer transmitter and broker of knowledge as well as of competence. Hr Edn in Europe 22(3), 1997, 293-301.

WOMEN'S STUDIES

Hiramath, Ujwala. Impact of education on the status of women. J of Hr Edn 20(4), 1997, 432-51.

EDUCATIONAL ADMINISTRATION

Anil Kumar. Assessment centre : A new approach to employees assessment. J of Engg Edn 11(4), 1998, 28-32.

Bhaskaran, R. Industry institution partnership for mutual benefit in today competitive global context. J of Engg Edn 11(4), 1998, 33-7.

Bone, Alison and Bourner, Tom Developing university managers. Hr Edn Q 52(3), 1998, 283-99.

Dearlove, J. Fundamental changes in institutional governance structures : The United Kingdom. Hr Edn Policy 11(2-3), 1998, 111-20.

Dill, William R. Specialized accreditation · An idea whose time has come? or gone? Change 30(4), 1998, 18-25.

Gerth, Donald R. Universities and the international knowledge enterprise. New Frontiers in Edn 28(2), 1998, 199-204.

Nakamura, Toshio. A challenge to Japan : Creating a fruitful university-industry partnership. New Frontiers in Edn 28(2), 1998, 193-9.

Rajput, J S and Walia, K. Quality in higher education J of Hr Edn 20(4), 1997, 553-67.

TEACHERS AND TEACHING

Gaff, Jerry G and Prvitt-Logan, Anne S. Preparing college faculty. New Directions for Hr Edn 101, 1998, 77-86.

Sundaram Pankajam, Cooperative teaching in institutions of higher learning : A provocative challenge. J of Hr Edn 20(4), 1997, 589-92.

EDUCATIONAL RESEARCH

Chengalvarayan, P. Research promotion strategies in universities. J of Hr Edn 20(3), 1997, 395-40.

EDUCATIONAL TECHNOLOGY

Cahoon, Brad. Teaching and learning internet skills. New Directions for Adults and Continuing Edn 78, 1998, 5-13.

Gupta, Renu. Can spelling checkers help the movie writer?, British J of Ednl Tech 29(3), 1998, 255-66.

King, Kathleen P. Course development on the world wide web. New Directions for Adult and Countinuing Edn 78, 1998, 25-32

Mcloughlin, Catherine and Oliver, Ron. Maximising the language and learning environments. British J of Ednl Tech 29(2), 1998, 125-36.

ECONOMICS OF EDUCATION

Correa, Hector. Higher education tution for optimal educational returns. Hr Edn Policy 11(2-3), 1998, 229-34.

Lyngdoh, K S. Quality in and financing of higher education in India since independence J of Hr Edn 20(4), 1997, 569-74.

Paulsen, Michael B. Recent research on the economics of attending college : Returns on investment and responsiveness price. Research in Hr Edn 39(4), 1998, 471-89.

VOCATIONAL EDUCATION

Abdul Kareem, A and Ramaswami, P P. Agricultural higher education in India : Perspective from the South. J of Hr Edn 20(4), 1997, 605-14.

Kshirsagar, P H and others New strategies for technical education in 21st century. J of Engg Edn 11(4), 1998, 56-61.

Radhakrishnan, V H. Some aspects of laboratory management and upkeep J of Engg Edn 11(4), 1998, 10-9.

DISTANCE EDUCATION

Eastmond, Deniel V. Adult learners and internet based distance education. New Directions for Adult and Continuing Edn 78, 1998, 33-41.

IGNOU. Open and distance education-2002 : I — vision and strategy. J of Hr Edn 20(3), 1997, 437-46.

————— Setting up of State Open University : Guidelines. J of Hr Edn 20(3), 1997, 433-6.

IGNOU, Distance Education Council. Norms and guidelines for establishment of State Open University. J of Hr Edn 20(3), 1997, 447-50.

Raja Mouli, Cherla, Higher education by distance mode in India J of Hr Edn 20(4), 1997, 615-20.

Tulsi, P K. Distance education : Alternative for inservice teachers education. J of Engg Edn 11(4), 1998, 20-7

COMPARATIVE EDUCATION AND AREA STUDIES

deBoer, Harry and others On boards and councils; shaky balances considered. The governance of Dutch universities. Hr Edn Policy 11(2-3), 1998, 153-64.

Dimmen, Aasmund and Kyvik Svein. Recent changes in the governance of higher education institutions in Norway. Hr Edn Policy 11(2-3), 1998, 217-28.

Fisher, Glen, Policy governance and the reconstruction of higher education in South Africa. Hr Edn Policy 11(2-3), 1998, 121-40.

Powar, K B. Higher Education in India since Independence : Retrospect and future options. J of Hr Edn 20(4), 1997, 481-518.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY GRANTS COMMISSION

Applications are invited for the following posts in the office of the University Grants Commission.

1. Legal Adviser (on deputation)-One — Scale : Rs. 14300-400-18300

2. Assistant Legal Adviser (on deputation)-One — Scale : Rs. 12000-375-16500

The eligibility criteria for the above posts are as under :

1. LEGAL ADVISER

ELIGIBILITY — Officers under Central Government/State Government/Autonomous Body/University/Judiciary.

(a) i) holding analogous posts on regular basis,

or

ii) with 5 years regular service in the scale of pay of Rs. 3700-5000 (pre-revised) which is revised to Rs. 12000-375-16500.

(b) possessing the following educational qualifications :

ESSENTIAL

i) Having IInd Division in LL.B. Degree.

ii) Experience in dealing with educational matters.

DESIRABLE

i) IInd Division in LL.M.

ii) 10 Years experience in handling Criminal/Civil Law cases

(c) AGE LIMIT

55 Years (on the date of publication of advertisement).

2. ASSISTANT LEGAL ADVISER

ELIGIBILITY — Officers under Central Government/State Government/Autonomous Body/University/Judiciary.

(a) i) holding analogous posts on regular basis,

or

ii) with 5 years regular service in the scale of pay of Rs. 3000-4500 (pre-revised) which is revised to Rs. 10000-325-15200.

(b) possessing the following educational qualifications :

ESSENTIAL

i) IInd Division in LL.B.

ii) Experience in dealing with educational matters.

DESIRABLE

i) IInd Division in LL.M

ii) 7 years experience in handling criminal/civil cases.

(c) AGE LIMIT

50 Years (on the date of publication of advertisement)

These posts are to be filled on the basis of deputation (but can be considered for absorption) on the following terms and conditions

i) The persons selected will have the option to draw pay as his/her grade plus deputation (duty) allowances in accordance with the Ministry of Finance's order No.F.14(2)/IC/86 dated 13 3.87 or to have his/her pay fixed in the scale of pay of the post subject to certain restrictions in this regard. According to the said orders, deputation (duty) alowance shall be paid to the officer at the rate of 5% of the basic pay, subject to the ceiling of Rs. 500/- p.m. within the same station or at the rate of 10% of basic pay subject to a ceiling of Rs. 1,000/- p.m. in other cases in terms of Government of India, Department of Personnel and Training O.M. No 2/8/97-Estt. (Pay II) dated 11.3.98.

ii) The applications of eligible candidates who fulfil the minimum required qualifications and experience, as prescribed above, be addressed to the Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110 002, giving names of two persons to whom reference may be made by the Commission, of whom one should be the present employer, and it should reach the Office of the UGC within one month from the date of publication of the advertisement. Persons already in employment should send their applications through their employer, otherwise, these will not be entertained.

Incomplete applications, or the applications received after the last date, will not be entertained.

iii) Applications in the given proforma, along with complete and uptodate confidential reports for the last five years, of eligible persons who could be spared in the event of their selection, may be sent to the Commission within one month from the date of publication of the advertisement. While sending the application, it may be verified and certified that the particulars furnished by the officer are correct and that no disciplinary case is pending or contemplated against the officers.

It is important to note that possession of mere eligibility conditions will not entitle a person for consideration by the Selection Committee. The decision of the Screening Committee for the purpose to shortlist the candidates, from amongst the total number of applications received, will be binding on all. Incomplete applications will not be considered.

The Commission reserves the right not to fill up any or all these posts and its decision in this regard shall be final.

BIO-DATA

1. Name and Address (in BLOCK LETTERS) :

2. Date of Birth (in Christian Era) :

3. Date of retirement under Central/State Govt. rule :

4. Educational Qualifications : Whether educational and other qualifications required for the post are satisfied (If any qualification has been treated as equivalent to the one prescribed in the rules, state the Authority of the same) :

Qualification/Exp. required   Possessed by the Officer

Essential : —————

5. Please state clearly whether in the light of entries made by you above, you meet the requirements of the post.

6. Whether your candidature is for appointment on transfer on deputation.

7. Details of Employment in chronological order (enclose a separate sheet duly authenticated by your signature, if the space is insufficient) :

Office/Instt./Org.	Post held	from	to	Scale of pay & basic pay	Nature of work handled (including details on the type of legal cases handled and the nature of the present work)

8. Nature of present employment i.e. adhoc or temp. or quasi-permanent or permanent.

9. In case the present employment is held on deputation/contract basis, please state. :

   a) the date of initial appointment.

   b) Period of appointment on deputation/contract :

   c) Name of the parent office/organisation to which you belong :

10. Additional details about present employment ·

   Please state whether working under

   (a) Central/State Govt.   (c) Government undertaking

   (b) Autonomous organisation (d) University

11. Are you in revised scale of pay, if yes, give the date from which the revision took place and also indicate the pre-revised scale.

12. Total emoluments per month now drawn :

13. Additional information, if any, which you would like to furnish-in support of your suitability for the post. (Enclose a separate sheet, if the space is insufficient).

14. Whether belong to SC/ST/OBC ·

15. Remarks, if any

Date : ——————————   Signature of the candidate
                               Address : ——————————

Countersigned ——————————
(Employer)

KARNATAK UNIVERSITY
DHARWAD

No.KUBOA/98/278   Date : 30.10.1998
CORRIGENDUM

A post of P.G. Lecturer in Business Management (Studies) reserved for SC Backlog which was inadvertently notified under this office advertisement No. KUBOA/ADVT/98/225 dated : 21-9-1998 stands deleted.

Dr. S. Rajasekhara
REGISTRAR

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,
AURANGABAD

Advertisement No. ESTT/DEPT/100/98

Applications are invited in the prescribed form for the following Teaching Posts in the Department of URDU of the University so as to reach the undersigned on or before December 21, 1998.

1. Reader in Urdu · One Post (for Open Category

   Pay Scale : Rs. 3700-5700

2. Lecturers in Urdu . Two Posts (One for Scheduled Caste and One for Open)

   Pay Scale : Rs. 2200-4000

Note : (1) 30% Reservation of Posts of Women in the subject/Cadre in respective reserved/

Open category will be applicable as per Government Resolutions issued from time to time.

(2) Relaxation from requirement of a minimum of 55% marks at the Master's Degree level is not permissible in any case.

(3) Details regarding qualifications, experience, specialisations etc for the posts mentioned above will be supplied separately alongwith the prescribed application forms and the same will be available in the University Office

INSTRUCTIONS

(1) The application form (Ten Copies) should be duly complete in all respects neatly and correctly Zerox copies of application form will not be entertained. (2) Candidates who wish to apply for more than One post must submit a separate application for each post. (3) As per Government Resolution, if suitable candidate is not available from a particular reserve category, the candidate from other category will be considered for appointment on a purely temporary basis for a period of one year. (4) Candidates belonging to specific reserved category from Maharashtra State alone shall be considered for the reserved post. (5) Candidates who are in employment should submit their applications through proper channel. (6) Prescribed application form (a Set of Ten copies) can

be had from the University office on payment of Rs. 50/- for reserved category candidates, and Rs. 200/- for Open category candidates and if application is demanded through post send a Demand Draft for the amount of Cost of application form alongwith postal Charges of Rs. 30/- drawn in favour of the Registrar, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad-431 004 payable at Bank of Maharashtra, University Branch, Aurangabad. (7) Each application in the set alongwith required enclosures duly attested should be sent in an envelope superscribed "Application for the post of ——————" so as to reach the Registrar, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad-431 004 on or before 21st December, 1998. (8) The University will not be responsible for postal-delay, if any. (9) Application forms received after the last date will not be considered.

November 13, 1998   REGISTRAR

UNIVERSITY OF MUMBAI

Applications are invited in the prescribed form for the post of Professor-cum-Director (Open) in the Institute of Distance Education of the University of Mumbai, on contract basis for a period of 5 years, in the scale of pay of Rs. 4500-150-5700-200-7300

In addition to pay, Dearness Allowance, House Rent Allowance, Compensatory Local Allowance will be paid according to the University rules. The post will carry the retirement benefits according to the existing rules of the University. Teachers of the University are permitted to take up outside work according to the University rules.

The minimum qualification prescribed for the post is as under ·

Professor-cum-Director :

An eminent scholar with published work of high quality, actively engaged in research with ten years of experience in postgraduate teaching and/or research at the University/National level Institutions, including experience of guiding research at doctoral level

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Experience :

The Institute of Distance Education has an enrolment of over 23,000 students at undergraduate and postgraduate levels. The person we are looking for should be energetic and enthusiastic with vision to develop various courses through the Institute of Distance Education. At least 10 years' experi-

ence of University/College administration as also of organizing and participating in writing lessons for distance education, is desirable.

Job Description :

The incumbent will perform as academic and administrative Head of the Institute of Distance Education. He/She will be responsible for the smooth conduct of various courses run by the Institute and co-ordination of various related activities like production of course material and its distribution, organisation and co-ordination of student support services/activities, conduct of various examinations of the Institute and co-ordination with University examination system, wherever necessary.

Age :

Preferably not less than 45 years at the time of appointment.

Nine copies of the application in the prescribed form together with attested copies of certificates alongwith a crossed Demand Draft of the prescribed fee in favour of The Finance and Accounts Officer, University of Mumbai, should be sent in an envelope superscribed with "Application for the post of ———————" so as to reach the Registrar, University of Mumbai (T.A U Room No. 134) Fort, Mumbai-400 032 on or before 16th December 1998. Candidates from abroad, Andaman and Nicobar Islands and Lakshadweep may send their applications so as to reach the Registrar on or before 31.12.1998. Candidates who are already employed shall send their applictions through proper channel Applications received after the last date fixed for the receipt of applications will not be accepted The University shall not be responsible for any postal delay. Incomplete application and applications on plain paper will not be considered Candidates called for interview will have to present themselves at their own expenses. Canvassing direct or indirect will be a disqualification.

Prescribed forms of application can be had free of charge, from the Teaching Appointments Unit, Registrar's Office (Room No. 134), University of Mumbai, Fort, Mumbai-400 032. Request for supply of a set of nine prescribed forms by post should be made sufficiently in advance with a self-addressed stamped (Rs. 12.00) envelope of the size 27x12 cms.

Candidates having knowledge of Marathi will be preferred.

Mumbai-400 032   Dr. P.V. Pradhan
31st October, 1998   REGISTRAR

THE UNIVERSITY OF BURDWAN
RAJBATI : BURDWAN
WEST BENGAL
Advertisement No. 12/98-99
dated 13 Nov., 1998.

Applications in the prescribed forms are invited for the following posts of teachers and officers of the University :

(1) Professor of Economics — One post

(2) Professor of Mathematics (Pure) — One post

(3) Professor of Physics — One post

(4) Reader in Economics — One post

(5) Reader in English — One post

(6) Reader in Mathematics (Applied) — One post

(7) Reader in Commerce — One post

(8) Reader in Business Administration — One post

(9) Reader in Botany — Two posts

(10) Reader in History — One post

(11) Reader in Environmental Science — One post

(12) Reader in Law — Three posts

(13) Lecturer in Geography (Reserved for S.T) — One post

(14) Lecturer in Environmental Science (One post reserved for S C.) — Two posts

(15) Lecturer in Sociology — One post

(16) Director, Adult, Continuing Education & Extension Programme — One post

(17) Development Officer — One post

(18) Audit & Accounts Officer — One post

(19) Programmer (Computer Centre) (Lien bound and reserved for S.T.) — One post

(20) Part-time Lecturer in Physics ⎫
(21) Part-time Lecturer in Law   ⎬ A few
(22) Part-time Lecturer in Hindi ⎪ posts
(23) Part-time Lecturer in History ⎭

(24) Publications Officer (Reserved for S.C.) — One post

(25) Librarian — One post

(26) Professor of Statistics — One post

Scale of Pay :

In respect of whole-time teaching posts — as prescribed by the UGC. For Part time teaching posts — Rs. 75/- per lecture hour, 2 lecture hour per week. For Director, ACE & E and Librarian — Rs. 4500-150-5700-200-7300/-, For Development Officer and Audit and Accounts Officer — Rs. 3700-

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125-4950-150-5700/-, For Programmer (Computer Centre) and Publications Officer — Rs. 2200-75-2800-100-4000/-. Plus Dearness and other admissible allowances and pensionary benefits as per University Rules for all the posts except Part-time posts.

Minimum Qualification & Experience :

For posts (1) to (15) and (26) — As per latest UGC guidelines. In addition, For (7) — M.A./M.Sc. in Economics. For posts (11) and (14) — Masters Degree in Environmental Science or Masters Degree in Chemistry/Zoology/Botany with adequate exposure through experience/research to Environmental Science, for post (16) — (a) First or Second Class Master's Degree of an Indian University or an equivalent qualification of a foreign University in adult education/social sciences/social work. (b) A research degree of the doctoral standard in any of the social sciences, education, adult education or on the basis of review of published research carried out. (c) About ten years experience in programme planning, administration and teaching. (d) Persons with experience in community development projects with emphasis on adult/non-formal education will be preferred. For post (17) — (a) **Essential :** (i) Uniformly good academic record with a B+ Master's Degree. (ii) At least 10 years' experience in a position involving supervision, control and planning of administration of Colleges, Universities/Institutes of Higher Learning or Government or Quasi-Government organisation. (iii) Age not below 35 years. Relaxable in the case of exceptionally qualified candidates. (b) **Desirable :** (i) A Doctorate Degree or published work of high standard. (ii) Experience of at least 7 years in University or in Postgraduate Research Organisation as Assistant Registrar or equivalent post. In that case, records of performance will be examined. For post (18) — (a) **Essential :** (i) Uniformly good academic record with a B+ Master's Degree (ii) Experience in Audit and Accounts work for at least 7 years in senior position involving supervision, control and planning and management of Audit and Accounts. (iii) Master's Degree in Commerce/Business Management will be given preference. (iv) Age not less than 35 years. Relaxable in the case of exceptionally qualified candidates. (b) **Desirable :** Membership of the Institute of Cost Accountants and Chartered Accountants of India. The requirement of Master Degree will be waived in case of such candidates. For post (19) — **Essential :** M.E./M.Tech. in Computer Science or B.E./B.Tech./M.C.A., M.Sc. (Physics/Mathemat-

ica/Statistics/Chemistry) with two years of experiene in programming in Scientific/Business Language. For posts (20) to (23) — Same as for Lecturers post as per latest UGC guidelines. For post (21) — Candidates with LL.B. and 5 years practicing experience may also apply. Existing Part-time Lecturers in the subject are also to apply on plain papers. For post (24) — (a) Essential : (i) Uniformly good academic record followed by a B+ Master's Degree or its equivalent. (ii) For graduates with Degree or Diploma in Printing Technology, the Master's Degree may be waived. (iii) At least 10 years' experience in editing and organising publication work through press. (iv) Age not less than 30 years. Relaxable in the case of exceptionally qualified candidates. (b) Desirable : A Degree or Diploma in Journalism. The requirement of Master Degree may be waived for candidates having 15 years' experience in editing and publication work in publishing concern of high repute. For post (25) — (a) Essential : (i) Uniformly good academic record with a B+ Master's Degree in Library Science or a B+ Master's Degree followed by a Bachelor's Degree in Library Science. (ii) At least 10 years' experience of working in Administration/Management position in a Library of a University or an Institute of Postgraduate Studies. (iii) Age not less than 40 years. Relaxable in case of exceptionally qualified candidates. (b) Desirable : (i) A Doctorate Degree or published research work of similar merit. (ii) Knowledge of at least one foreign language (other than English). Those who applied earlier in response to advertisement No. 16/96-97 dated 20 5.97 need not apply afresh. SPECIALISATION : For posts (1), (2), (8), (10), (11), (12), (14) and (15) — Any branch of the subject concerned. For post (3) — Nuclear Physics/Radio Physics & Electronics/Solid State Physics/X-Rays and Crystallography/Theoretical Physics/Spectroscopy. For post (4) — International Economics. For post (5) — Commonwealth Literature/Renaissance Literature/American Literature. For post (6) — Any branch of Applied Mathematics other than Quantum Mechanics having knowledge in Dynamical Systems/Operations Research. For post (7) — Labour Economics/Statistics & Econometrics (Desirable : Exposure to Computer Applications). For post (9) — Ecology/Pteridology/Genetics & Plant Breeding. For post (13) — Special aptitude in Environmental Studies in Geography (Desirable — Specialisation/Training in Social/Urban Geography/Regional Planning/Population

Geography). For post (20) X-Ray & Crystallography/ Relativity. For posts (21), (22) & (23) — Different areas of the subjects concerned. For post (26) — Reliability Theory/Survival Analysis/Operations Research/Bio-Statistics/Geo-Statistics/Statistical Quality Control. Prescribed application forms may be obtained from Rajbati, University of Burdwan, personally on payment of Rs. 20/- in cash at the University Sales Counter from 11 a.m. to 1.30 p.m on

working days (except 2nd & 4th Saturdays) or by sending a self-addressed stamped (Rs. 4/-) envelope (11"x9") accompanied by Crossed I.P.O. of Rs. 20/- drawn in favour of the Finance Officer, the University of Burdwan. Last date for submission of applications to the Registrar, the University of Burdwan, Rajbati, Burdwan-713 104 with requisite fee of Rs. 25/- payable in the manner indicated above, is December 7, 1998.
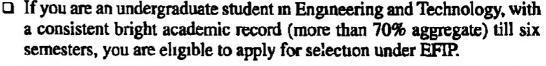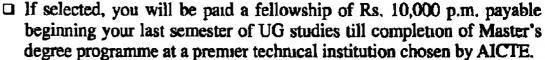
REGISTRAR

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
EARLY FACULTY INDUCTION PROGRAMME (EFIP)

AICTE welcomes young and talented engineering students with an aptitude for teaching to take steps towards a promising teaching career.

Interested?

Avail yourself of the opportunity to join the EFIP

- ❏ If you are an undergraduate student in Engineering and Technology, with a consistent bright academic record (more than 70% aggregate) till six semesters, you are eligible to apply for selection under EFIP.

- ❏ If selected, you will be paid a fellowship of Rs. 10,000 p.m. payable beginning your last semester of UG studies till completion of Master's degree programme at a premier technical institution chosen by AICTE.

- ❏ On completion of your Master's degree programme, you will have to teach for a minimum period of 3 years in the receiver institution identified and entered into an agreement with, at the time of receipt of fellowship.

- ❏ The last date of receipt of application for the positions of Teaching Fellow for the year 1998-99 is **November 30th 1998.**

For further details, contact

Professor R. Ramprabhu, Adviser,
All India Council for Technical Education,
Indira Gandhi Sports Complex, IP Estate, New Delhi-110 002.
E-mail:rprabhu@aicte.ernet.in,
Internet:www.aicte.com

Karnatak Law Society's
INSTITUTE OF MANAGEMENT EDUCATION & RESEARCH

P.B. No. 504, 'Safalya', Plot No. 427, Bhagyanagar II Cross,
Tilakwadi, Belgaum-590 006.
Phone : 0831-482243, FAX : 0831-481745, Email : imer@blgimer.kar.nic.in

TWO YEAR FULL TIME PROGRAMME IN POST GRADUATE DIPLOMA IN MANAGEMENT

[Recognised by AICTE, Ministry of HRD, Govt. of India, New Delhi]

IMER,, established in 1991, by a Non-Profit Educational registered Society, has acquired comendable position as a unique centre for Management Science Studies in North Karnataka, South Maharashtra & Goa Region. The Institute offers courses in Marketing, Finance, Personnel, Production & Systems with any combination of the students interest.

THE PROGRAMME STRUCTURE : The Institute enjoys flexibility in Curriculum design. The Faculty advises the Institute to make necessary changes in the Syllabi as per the changing environment in the Corporate World. It is aimed at developing outstanding Business Leaders through Conceptual, Practical and Technological Knowledge.

HOSTEL FACILITY : Exclusive Hostel accommodation is provided separately for Boys & Girls.

ADMISSION PROCEDURE : The Candidate must have a Bachelors Degree in any discipline from a Recognised University with a minimum 50% marks. Candidates appearing for Final Examination & who have applied for December 6, 1998 MAT Examination may apply and submit provisional marks card with passing certificates at the time of admission.

PROSPECTUS : The Prospectus and Registration Forms are available at the Institute on payment of Rs. 350/- by Cash or Rs. 400/- by Demand Draft in favour of The Director, KLS IMER, Belgaum. The duly filled Application Form should reach us by **10th February 1999.**

GD/INTERVIEW : The Shortlisted candidates who have submitted the Institute's Application Forms alone will be called for Group Discussion & Personal Interview at Institute's Premises.

DIRECTOR
KLS IMER

UNIVERSITY OF DELHI

Ref. : Estab.-IV/Advt. No. 159/98   **Dated : November 06, 1998**

Applications are invited on the prescribed forms for the following posts, so as to reach the **Registrar, University of Delhi, Delhi-110 007, latest by 15th December, 1998.**

**S. Department/Post (No. of Posts)/
No. Reservation & Specialisation/
Desirable Qualifications, if any**

1. **Chinese & Japanese Studies**
   Reader (1)
   Experience in teaching Post-Graduate classes in Japanese language and literature

2. **Chemistry** *Professor (2), Reader (11)*
   Inorganic-(3), Organic-(3), Physical-(3) and Gen -(2)
   Specialization for posts in Inorganic, Organic and Physical is at M Sc level must be Inorganic, Organic and Physical respectively For Physical Chemistry posts, candidates must also have Mathematics at B Sc level
   Lecturer (2)
   (Reserved for SC-1 and ST-1)

3. **Linguistics** *Reader (1)*
   Theoretical Linguistics with Recent Developments in Transformational Syntax/Computational Linguistics
   Lecturer (1) (Reserved for SC)
   Computational Linguistics/Syntax

4. **Management Studies**
   Reader (1)
   Organisational Behaviour, Human Resource Management, Marketing

5. **Social Work** *Lecturer (2)*
   (Reserved for ST-1 and UR-1)
   Integrated Social Work Method, Social Welfare Administration, Ecology and Social Work, Social Work with Special Groups, Social Case Work

6. **Central Office**
   University Cashier (1)

7. **Statistics**
   Laboratory Attendant (1)
   Ref. : Advertisement No. 151 dated 21.04.97 & 153 dated 17.06 97:
   Applications are also invited for the following posts which had been advertised earlier vide Advt Nos 151 & 153 Persons who have applied earlier need not apply again

8. **Botany** *Reader (4)*
   1 Algae/ Archegoniatae
   2 Microbiology/ Genetics/ Cytogenetics/ Molecular Biology
   3. Plant Physiology and Plant Bio-chemistry
   4. Plant Biotechnology/ Cell Biology

9. **Geology** *Reader (1)*
   Geophysics, Igneous Petrology, Engineering Geology, Remote Sensing Geo-energy resources

10. **Management Studies**
    Lecturer (7) (Reserved for SC-1, ST-1 and UR-5)

Computers and MIS, Managerial Economics & International Business Environment; Business Communication, Advertising & Sales Management; Production & Operations Management, Health Care Administration, Business Law & Corporate Taxation, Strategic Management
Lecturer (1) (South Delhi Campus)
(Reserved for SC)
Computers & MIS

11. **Philosophy** *Reader (1)*

12. **Psychology** *Reader (1)*
    Organisational Behaviour/ Developmental Psychology

13. **Sanskrit** *Reader (1)* Epigraphy

14. **Urdu** *Professor (1)* Criticism

15. **Zoology** *Professor (3)*
    Cell & Molecular Biology/ Insect Taxonomy/ Limnology/ Insect Behaviour
    Reader (2) Animal Physiology & Bio-chemistry/ Immunology/ Developmental Biology/ Endocrinology/ Fish Biology
    Ref. : Advertisement No. 152 dated 15.04.97 :
    Applications are also invited for the following posts which had been advertised earlier vide Advt No 152 Persons who have applied earlier need not apply again

16. **Delhi University Library System**
    Professional Senior (7) (One each reserved for SC, ST, OBC and UR-4)
    Professional Junior (9) (Reserved for SC-2, ST-1, OBC-1 and UR-5)
    Documentation Officer (2) (Reserved for OBC-1 and UR-1)

SC : Scheduled Caste
ST : Scheduled Tribe
OBC : Other Backward Classes
UR : Un-reserved

Separate application is required for each post For post meant for South Campus, separate filled in application be sent to the **Deputy Registrar, University of Delhi South Campus, Benito Juarez Road, New Delhi-110021.**

SCALE OF PAY :
The undermentioned scales of pay are likely to be revised on the basis of Vth Pay Commission The other conditions which may be prescribed with the revised scales will be applicable to those who would be appointed in response to this advertisement

Professor :
Rs 4500-150-5700-200-7300;
Reader/Professional Senior :
Rs 3700-125-4950-150-5700;

Lecturer/Professional Junior/ Documentation Officer :
Rs. 2200-75-2800-100-4000,
University Cashier :
Pre-revised Rs 1640-2900,
(Revised - Rs 5500-9000)
Laboratory Attendant :
Pre-revised Rs 800-1150
(Revised Rs 2650-4000)

All the above posts carry DA, CCA, HRA etc as admissible under the rules in force in the University from time to time

Application forms for the above posts and details regarding qualifications can be had from the **Establishment Branch-IV (Room No. 205), New Administrative Block, University of Delhi, Delhi-110 007, during working days (from 10.00 a.m. to 12.30 p.m. and 2.00 p.m. to 5.00 p.m.) either personally or by sending a self addressed & postage stamped envelope worth Rs.22/- (size 13 cms X 28 cms).**

APPLICATION FEE :
Application Fee of Rs. 100/- (Rs. 25/- in case of SC/ST) (NON-REFUNDABLE) for each post except at Sl. No. 6, 7 & 16 in the form of Indian Postal Order/Bank Draft drawn in favour of the Registrar, University of Delhi, payable at Delhi/ New Delhi is required to be submitted alongwith the Application Form. Candidates must write their name and post applied for on the back side of the Bank Draft/Indian Postal Order

Application Fee for the posts at Sl. No. 6 & 7 is Rs. 20/- (Rs. 5/- in case of SC/ST/OBC).

Application Fee for the posts at Sl. No. 16 is Rs. 100/- (Rs. 25/- in case of SC/ST/OBC).

NOTE :
1 It will be open to the University to consider names of suitable candidates who may not have applied
2 Number of posts is given within parenthesis against each post.
3 University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant
4 Relaxation of any of the qualifications may be made in exceptional cases on the recommendations of the Selection Committee
5 For Professor and Reader, other things being equal, preference will be given to SC/ST candidates.
6. 3% posts of Lecturers are reserved for Physically handicapped candidates

(K.K. PANDA)
REGISTRAR